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The next Annual Meeting of the Massachusetts Medical Society will be held at Plymouth, June 10 and 11, 1930

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ROBERT W. SMITH'S DESCRIPTION OF GENERALIZED NEUROFIBROMATOSIS (1849)*

BY JOHN F. FULTON, M.D., MAGDALEN COLLEGE, OXFORD†

ANYONE who by accident should discover a copy of Robert W. Smith's enormous elephant folio entitled *A treatise on the pathology, diagnosis, and treatment of neuroma*‡ will at once be filled with admiration and curiosity. The book is 28 inches in height, 18 inches in width, and in its original covers weighs 6 pounds. There are two preliminary leaves (a title and list of subscribers), 30 numbered pages of text (15 leaves), and 15 full-page plates of beautifully executed lithograph figures. On the title page, which is reproduced herewith (see Fig. 1), the author is described as "A Fellow of the Royal College of Surgeons in Ireland: Lecturer on Surgery at the Richmond Hospital School of Medicine; Surgeon to the Talbot Dispensary, House of Industry, and to the Lunatic Asylum at Island-Bridge; Secretary to the Pathological Society of Dublin; Fellow of the Royal Medico-Chirurgical Society of London." The work was published in Dublin by "Hodges and Smith, Grafton-Street, booksellers to the University" in 1849, and the writer has chosen for his motto an apt sentence from Cruveilhier, —scarcely less true now than then. "L'anatomie pathologique des nerfs, est encore à faire."

The book must be uncommon although there were two hundred subscribers, two of whom had ordered duplicate copies. The subscribers were chiefly from Dublin, though several were from Edinburgh and London and there was one from New York (John Wiley). It is not likely, therefore, that the issue was larger than 250 copies. No medical bookseller in London had ever seen a copy, as far as my enquiries have gone, until the present one turned up. They are possibly common in the second-hand shops in Dublin.

The work is remarkable for its magnificent plates depicting the pathological changes in several of the author's cases of generalized neurofibromatosis,—the disease now commonly known by the name of von Recklinghausen who gave a full description of it in the Virchow *Festschrift* in 1882. Though the plates in Smith's work, of which several are reproduced herewith (Figs. 2-5), are most remarkable for the period in which they were executed, the clinical descriptions which accompany them are no less excellent. After referring to a large number of cases which he had collected from the literature, Smith gives the clinical history of two striking patients which he had encountered in the year 1843; both were males, one aged 35 and the other aged 33. Each case presented generalized fibromatosis of the peripheral nerves, and the writer describes the clinical appearance as well as a detailed anatomical dissection of the whole peripheral and central nervous system of both cases. A paragraph from the description of the autopsy of the second case will serve to indicate his painstaking observations and style in writing (from p. 17).

"The body was greatly emaciated; the front and sides of the abdomen presented a singular appearance, owing to the existence of a vast number of tumours [Plate 7] in the subcutaneous cellular tissue; they were of rounded form, of the size of large peas, solid to the feel, and movable beneath the integuments, which were elevated by them; they were thickly disseminated over the whole front of the abdomen, with the exception of the supra-pubic region, and were found upon dissection to be connected, below with the terminating branches of musculocutaneous divisions of the lumbar plexus, and above with the filaments of the lower intercostal nerves, which are distributed to the muscles and integuments of the upper part of the abdomen. The four or five interior intercostal spaces presented numerous similar tumours, which were attached to the subcutaneous divisions of the corresponding intercostal nerves. Upwards of 200 of these small neuromatous tumours were scattered over the front and sides of the chest and abdomen. There were, likewise, a considerable number connected with the posterior branches of the dorsal and lumbar nerves."

Later, he says:

"Upwards of 1400 neuromatous tumours were removed along with the nerves in this unprecedented case, and yet this falls far short of the total number which had been formed, for upon many of the smaller nervous branches which were not dissected out they may be said to have existed in crowds, and I feel satisfied that there would be no exaggeration in stating the aggregate to be at least 2000. There

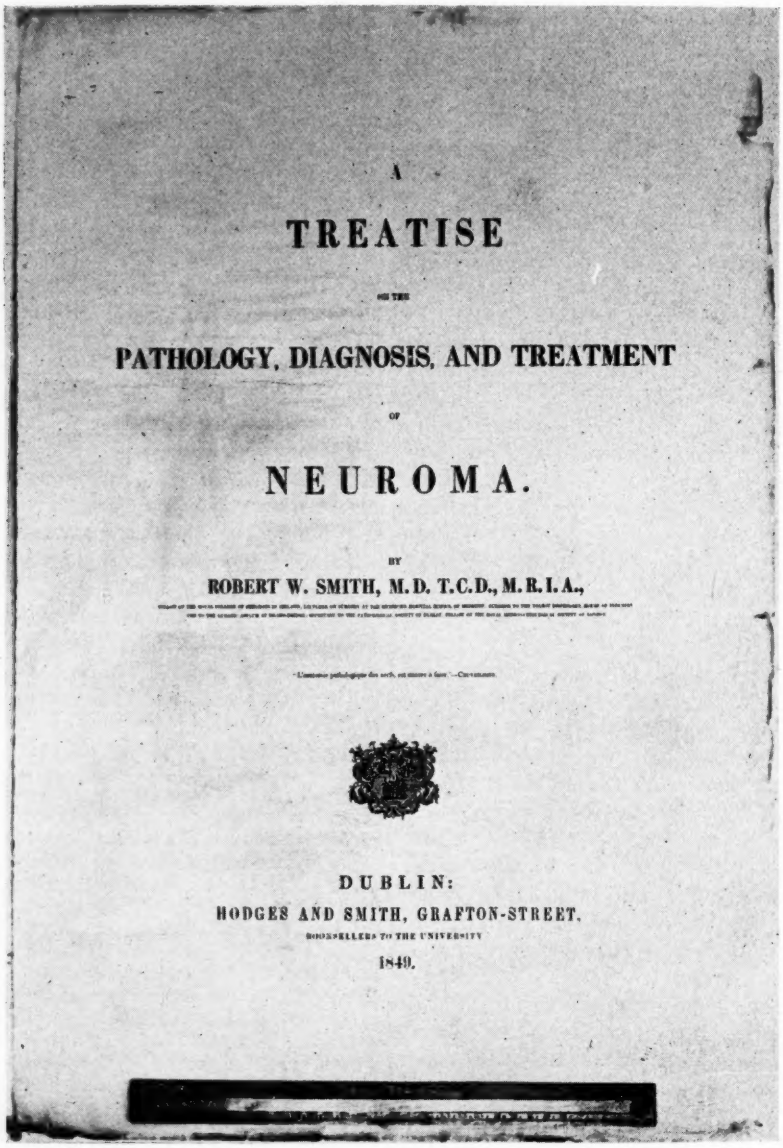
*Read to the Osler Club of London, January 25, 1929.

†For record and address of author see "This Week's Issue," page 1349.

‡Smith's monograph was once reprinted (1898) in *An Atlas of Illustrations of Pathology*, published by the New Sydenham Society (Fasciculus XI, plates I-lxiv, 38 pp.). In an unsigned 'Prefatory Note' dated Feb. 1898, the Editor remarks: "So carefully recorded are its observations, however, that their value is as great as at the time of original publication, and the reader will be struck by the practical absence of anything that seems antiquated. That the work appeared just before the general adoption of anaesthesia in operations is illustrated by the directions given on p. 34. There is, moreover, no mention on the word sarcoma throughout the book. It has been found necessary to reduce the size of the plates by one-half."

was nothing abnormal noticed in the nervous centres."

In a second section of Smith's monograph he describes a case of a woman of 40 years whom he had seen in 1836 who had come to him complaining of pain of several months' duration affecting the right side of her face. The pain was so



A

TREATISE

ON THE

PATHOLOGY, DIAGNOSIS, AND TREATMENT

OF

NEUROMA.

BY

ROBERT W. SMITH, M.D. T.C.D., M.R.I.A.,

DUBLIN:

HODGES AND SMITH, GRAFTON-STREET,

BOOKSELLERS TO THE UNIVERSITY

1849.

FIG. 1. The title page of Smith's treatise on neuroma. At the bottom is a foot rule which indicates the size of the original page.

increased by chewing that she was gradually dying of emaciation. At necropsy a fibromatous tumour was found in the right veno-temporal fossa involving the gasserian ganglion, but it is not clear from his description that this was a neurofibroma.

It is interesting that he examined his tissues at this early date microscopically, and states that the tumours found in his first case were "composed essentially of a fibro-cellular structure, the fibrous tissue predominating in by far the greater number, the areolar preponderating in few; the fibres were arranged in bands or loops amongst which permanent oval or elongated nuclei became apparent on the addition of acetic acid. In no instance, out of the numerous specimens examined, was there any trace of nerve-tubes, nor any indication whatever of the presence of any of the structures considered by modern pathologists as characteristic of malignant disease."

Smith does not mention pigmentation of the skin in the description of his cases. It is perhaps significant in this connection that none of the nerves of his cases were involved in their intracranial portions.

Alexis Thomson, who in 1900 wrote a mono-

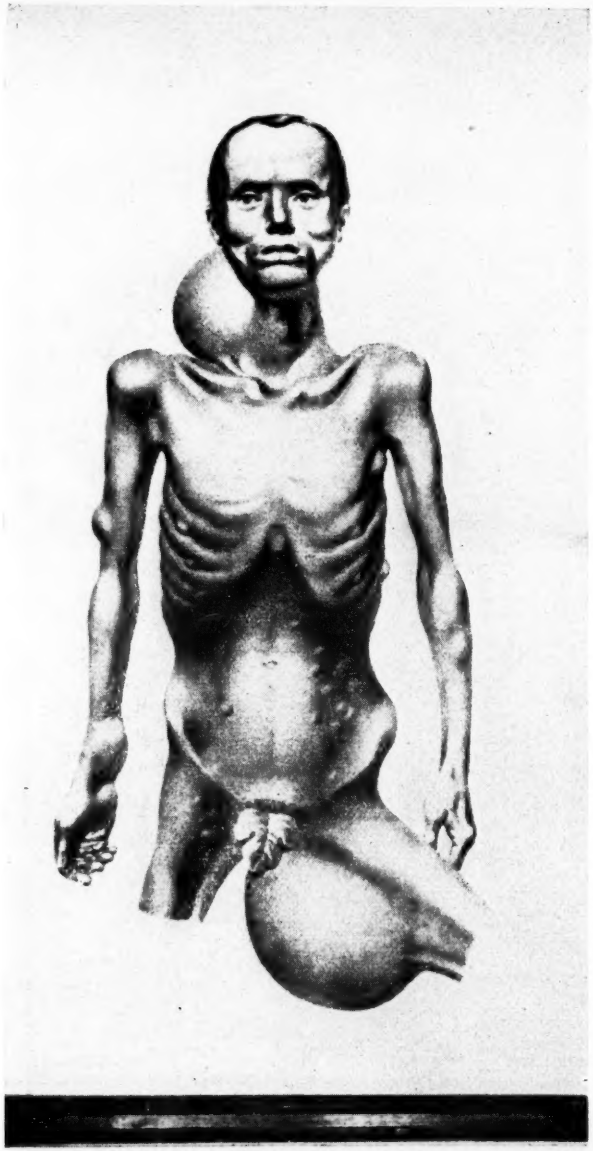


FIG. 2. Plate I of Smith's monograph, showing the external appearance of the body of his first patient, John M'Cann.

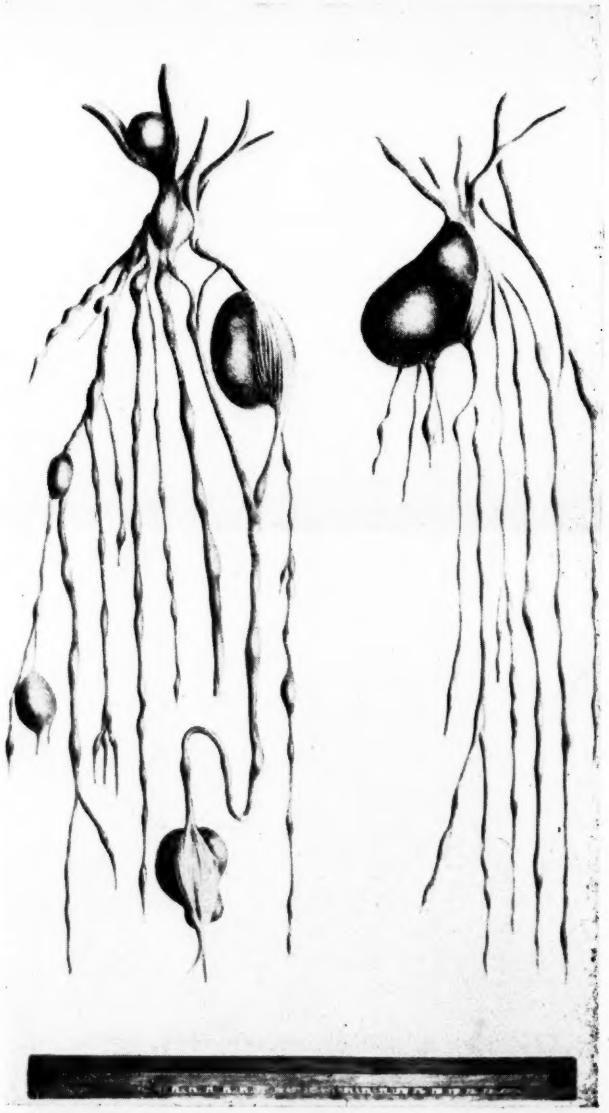


FIG. 3. Plate V of Smith's monograph, showing the nerves of the right and left upper extremities of his first case, dissected from the brachial plexus to the lower ramifications in the hand.

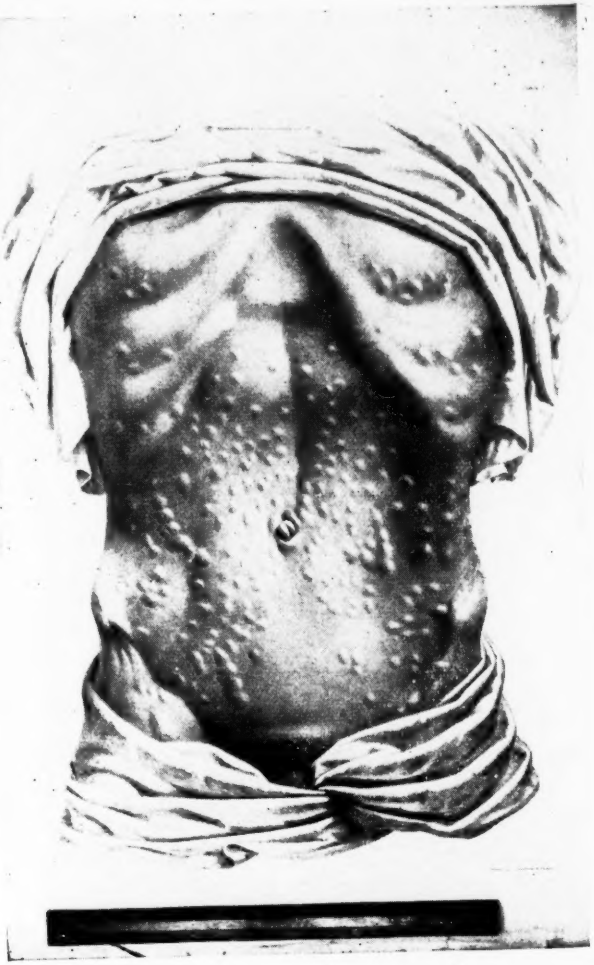


FIG. 4. Plate VII of Smith's monograph, showing the front of the abdomen of his second case, Michael Lawlor. Smith asks that one compare this plate with plate III of the 32nd Livraison of Cruveilhier.

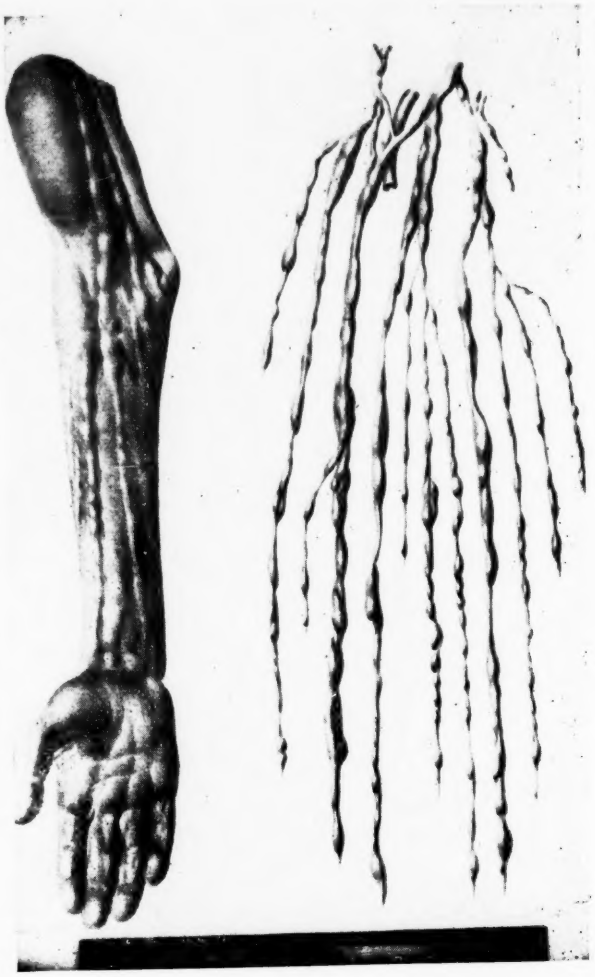


FIG. 5. Plate VIII of Smith's monograph, showing the surface appearance of the right upper extremity of his second case, and the nerves of that extremity after dissection.

graph entitled *On neuroma and neuro-fibromatosis,* was familiar with Smith's monograph and states that his preparations were then in the possession of the Royal University of Ireland, and that through the kindness of Sir James Meredith, the curator, he was enabled to see them when on a visit to Dublin. T. P. C. Kirkpatrick in his *History of the Medical Teaching in Trinity College, Dublin* (1912) remarks that it was to Smith's "exertions that the University [Dublin] owes the splendid museum of surgical pathology in which is preserved one of the finest collections of fractures to be seen in the kingdom" (p. 324).

A brief account of Smith's life is given by Sir Charles A. Cameron in a *History of the Royal College of Surgeons in Ireland* (1886). Born in Dublin, 12th October, 1807, Smith was educated in his native town and obtained his B.A. from the University in 1828, his M.A. in 1832, and his M.D. in 1842. His father was an Englishman and his mother one Isabella Allman, a descendent of George J. Allman, professor of mathematics in Queen's College, Galway. After being apprenticed to R. Carmichael at Trinity College, Dublin, Smith obtained appointments at the Richmond Hospital School and the House of Industry Hospital, subsequently becoming surgeon to the Lunatic Asylum at Island-Bridge and to the Talbot Dispensary. After teaching for many years he was appointed first professor of surgery at the Medical School in Dublin. Before his time the chair of surgery had included that of anatomy. He was one of the founders of the Dublin Pathological Society, and nearly all of his medical contributions were first read before this organization. He is described as being a clear and even brilliant lecturer, and evidently was most fastidious and painstaking in writing. Cameron says of him (p. 622): "So enthusiastic was he as a teacher that he latterly almost completely abandoned practice, in order that he might devote more time to study, and to the instruction of his classes. He was an accomplished linguist, and kept himself thoroughly posted up in the medical literature of France and Germany." His treatise 'Of Neuroma' is referred to by Cameron (p. 661) as "the largest work produced in Dublin."

Smith married Janet Black, sister of Dr. William Stokes' wife. He died on October 28, 1873. His bust in marble occupied the inner hall of the Royal College of Surgeons and a portrait of him hangs in the College Board-room. Through the courtesy of Dr. Alfred Miller, the Registrar, I have succeeded in obtaining a photograph of his portrait, which is reproduced herewith (Fig. 6).

In view of the excellence of Smith's description of generalized neurofibromatosis, it might be urged that the eponymic designation of von Recklinghausen's disease is scarcely justified. Eponymic usage varies widely and it is perhaps better in this case to preserve the name of von Recklinghausen since it was he who first recognized and accurately described the pathological nature of the lesion. Smith was unwilling to admit that the tumours contained nervous elements. "In none of them" he says "could any trace of nervous structure be detected." Von Recklinghausen recognized that they were produced from the terminal sheaths of the cutaneous nerves. This observation has met with universal acceptance and we feel that it entitles

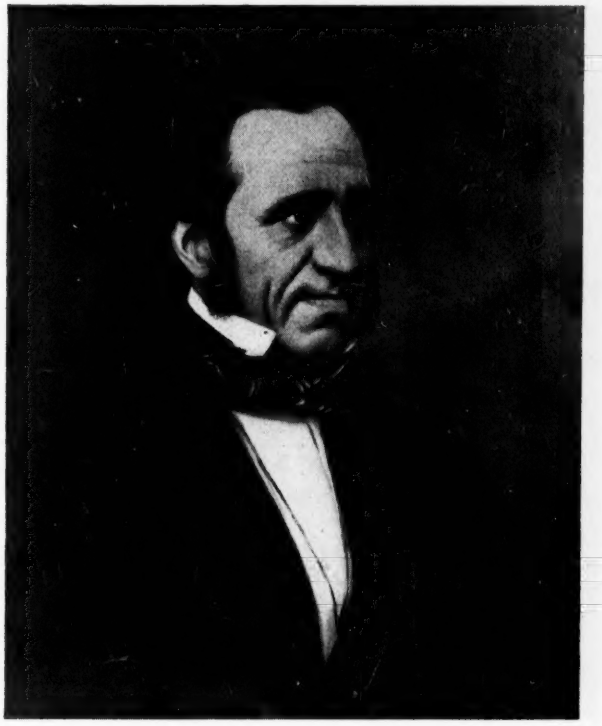


FIG. 6. A photograph of the portrait of Robert William Smith which hangs in the Royal College of Surgeons in Ireland.

von Recklinghausen's name to be associated with the disease, rather than Smith's, although much could be said in favour of Smith's claim.

SUMMARY

In 1849 Robert W. Smith (1807-1873), professor of surgery at the Dublin Medical School, described in great fulness two cases of generalized neurofibromatosis with necropsy and detailed pathological observations. His study of the condition appeared in an enormous folio monograph with 15 superbly executed lithograph plates, some of which are reproduced herewith. Smith's account thus appeared 33 years before von Recklinghausen's celebrated description of the condition was published. Since, however, von Recklinghausen was the first to offer the accepted theory of the pathology of neurofibromatosis, it is proper that it should be known as von Recklinghausen's disease.

THE ASSOCIATION OF GALL BLADDER DISEASE AND HEART DISEASE*

BY CLIFTON B. LEECH, M.D.†

THERE long has been a general impression among surgeons and internists that there is more than a casual association between diseases of the gall bladder and diseases of the heart or disturbances of its mechanism. It has been thought that gall bladder operations are complicated more often by post-operative deaths and cardiac accidents than are other operative procedures of similar gravity. Riesman[1], in 1907, wrote about the development of heart murmurs during attacks of biliary colic, which he considered due to pain causing dilatation and temporary insufficiency of the mitral valve. He interpreted this as meaning that a weakened heart muscle was present and he stated that gall bladder patients who had heart murmurs must be anaesthetized and operated with especial care. Babcock[2], in 1909, considered chronic cholecystitis a cause of myocardial incompetence. He said that previously damaged hearts were made much worse by gall bladder disease and that every experienced practitioner must have seen instances of the disastrous, if not fatal, effects on the heart of acute cholecystitis. He thought that acute infection of the gall bladder is capable of setting up a parenchymatous myocarditis and that a chronic gall bladder infection may induce a chronic myocarditis. He wrote of the depressing effect of cholemia and its manifestation in a bradycardia. He considered that biliverdin and bacterial toxins, circulating in the blood in chronic cholecystitis, do damage to the heart muscle and that accumulation of bile salts tends to raise the blood pressure. He mentioned the reflex effect on the heart, through the pneumogastric filaments, of biliary colic. He collected from the literature scattered cases of cardiac infections and of the occurrence of cardiac murmurs associated with gall bladder disease in which there was presumably a relationship between the gall bladder infection and the heart condition. The same author[3] in 1919 again communicated in regard to the frequent combination of heart and gall bladder disease. Flint[4], in 1920, dignified the alleged association by offering a paper entitled, "The Cholecystitic Heart." He borrowed this term from Sir Berkeley Moynihan. This paper was an exposition regarding the irritable character of the heart muscle in the presence of cholecystitis. He explained this as being due to an increase in the bile salts circulating in the blood causing an increase in the permeability of the lining cell membrane, thereby increasing the irritability of the cardiac muscle and increasing the rate of the heart beat. He held that the reverse is true; that is, that a diminution of the bile salts circulating in the blood causes a decrease in the permeability of the lining cell membrane and a diminished irritability. In jaundice, according to him, the bile salts circulating in the blood are diminished, which accounts for the slow pulse associated with this disease. In 1924, Ransohoff[5] stated that the association of inflammation of the gall bladder and bile ducts with cardio-vascular disease is so common as to demand serious consideration. He maintained that this combination usually constitutes a situation involving desperate risk and he divided these associations into three classes, as follows:—(1) gall bladder dyspepsia simulating cardiac disease, (2) gall bladder disease associated with valvular heart disease, (3) myocardial degeneration due to, or associated with, infections of the gall bladder. A recent communication by Bessesen and Bessesen[6] describes a case of congestive heart failure (etiology not mentioned) in which attacks of tachycardia appeared less often after the gall bladder was removed. These authors believe that cardiac disease can result from gall bladder illness.

An attempt has been made to determine whether or not there is evidence of more than an accidental association of disease of the gall bladder with disease of the heart or even with disturbances of the mechanism of the heart beat. For this purpose 116 consecutive cases of proven disease of the gall bladder, exclusive of malignant disease, occurring in both private and ward patients admitted to the Union Hospital, were studied. The clinical study was made by the author alone. Whenever possible, electrocardiograms were taken before and after operation. Many patients were repeatedly examined in order to make certain about the presence or absence of significant and interesting signs. The post-operative examinations were carried out during the final few days of the patient's stay in the hospital and some of the more important cases were studied after their return home. In many instances smears and cultures were made of material from the gall bladder at the time of operation and a portion of this material was injected into guinea pigs. A careful microscopical examination of sections of the walls of the gall bladder and bile ducts was made in certain of the cases to determine whether there was anything in the tissues similar to the Aschoff bodies in the myocardium.

Sex: Of the 116 cases, 24 (20.7%) were males and 92 (79.3%) were females.

*From the Cardiac Service, Union Hospital, Fall River, Mass.

†For record and address of author see "This Week's Issue," page 1349.

Diagnosis: Eighty-nine (76.7%) were cases of chronic cholecystitis; 27 (23.3%) were acute cholecystitis.

Age Incidence:

First decade	—none	
Second "	— 3	(2.5%)
Third "	—19	(16.4%)
Fourth "	—24	(20.8%)
Fifth "	—23	(19.9%)
Sixth "	—25	(21.5%)
Seventh "	—19	(16.4%)
Eighth "	— 3	(2.5%)
Ninth "	—none	

The greatest number of females occurred in the fifth decade to the number of 21 (18.1%); the greatest number of males occurred in the sixth decade to the number of 10 (8.6%).

Obesity: Because of a general impression of frequent occurrence of gall bladder disease in the obese, the incidence of obesity in this group was observed. Seventy-four (67.3%) of the patients were definitely obese; 65 were females and 9 were males. These figures may have some significance in that the 65 females represent 70.6% of the total number of females in the series, whereas the 9 males represent only 37.5% of the total number of males. The obesity was classified as moderate, mild and slight. A slight obesity was a minimum of twenty pounds more than the estimated ideal weight for the patient at the patient's age. Thirty patients were moderately obese, 21 were slightly obese, and 23 (25.8%) were markedly obese. There was no age significance in regard to the obesity. Nineteen of the obese patients had acute cholecystitis which is 70.3% of the total number of acute cases; the 55 obese patients with a diagnosis of chronic cholecystitis represent 61.7% of the chronic cholecystitis cases.

Mortality: The mortality in this series of operative cases was 6.89%, including those patients who died within three months after leaving the hospital. The general mortality of the abdominal operative cases, exclusive of the gall bladder cases in the same hospital during the same period of time, including only those who died in the hospital, was 8.22%. This general mortality is high, undoubtedly on account of the number of abdominal emergencies operated upon *in extremis*, but probably without these the mortality would be very little less than that of the gall bladder series.

Of the 8 deaths, 6 occurred in patients having chronic cholecystitis and 2 in patients with acute cholecystitis. Five (62.5%) were obese. Three (37.5%) had a history of precardiac disease and 4 (50%) had marked jaundice. Five (62.5%) were females: 3 (37.5%) were males. One death (12.5%) occurred in the third decade, 2 deaths (25%) were in the fifth decade, one (12.5%) in the sixth decade, 3 (37.5%) in the seventh decade, and one (12.5%) in the eighth decade. The electrocardiograms in the fatal cases were normal with the exception that one showed second degree heart block, one showed an inverted T wave in leads 1 and 3, one showed abnormal Q R S complexes in all leads and one abnormal T waves in all leads. Three of these four also showed levogram predominating. In none of the fatal cases was the heart rate remarkable. Four of the deaths occurred in patients with valvular disease.

Pulse Rate Before Operation:

Rate from 50 to 60	—none	
" " 60 to 70	—11	(9.5%)
" " 70 to 80	—25	(21.5%)
" " 80 to 90	—40	(34.5%)
" " 90 to 100	—15	(13%)
" " 100 to 110	—21	(18.1%)
" " 110 up	—4	(3.4%)

Only 13 patients with heart rates above 90 had acute cholecystitis. Consequently, fever did not play a large part in the elevation of the rate. If we eliminate the 13 with the acute infection, there are left 27 with a heart rate above 90, which represents 30.3% of those with chronic cholecystitis.

Change in the Pulse Rate after Operation: In 35 patients (30.2%) there was a decrease in the rate. In 36 patients (31.1%) there was an increase in the rate. In 45 patients (38%) the rate was unchanged. These changes seem to bear no relationship to the diagnosis; that is to say, those with acute cholecystitis did not have characteristically a decrease in the rate and those with chronic cholecystitis did not have an increase in the rate post-operatively. Of the 11 pulse rates which were below 70 before operation, 8 showed a definite post-operative increase, 2 showed no change in the rate, and 1 was a fatality. Of the 11 with the rate below 70, 10 had chronic cholecystitis; the eleventh was in a patient who died with an acute infection.

Jaundice: Thirty-three (28.4%) of the patients presented jaundice, 24 slight, 4 moderate, and 5 marked jaundice. Nine (37.5%) of the males were jaundiced and 24 (26%) of the females. In only one of the cases with jaundice was the heart rate below 70 and in that case it was 68. There was no age significance in regard to jaundice, nor was there anything significant in the blood pressures of these patients.

Precardiac Disease: Forty-two patients (36.2%) had a history of definite precardiac disease. Thirty-three of these, 20% of the total cases in the series, had had a rheumatic infection. Of the patients with a definite rheumatic history, 13 had a decrease in the heart rate after operation while 9 showed an increase in the heart rate post-operatively.

Heart Murmurs: Twenty-nine (25%) patients presented heart murmurs. Twenty-one of these (18.1%) were thought to be associated with organic lesions of the heart and great vessels. In the remaining eight the murmurs were

thought to be due either to temporary myocardial insufficiency or were so-called functional murmurs. Twelve, 10.3% of the total cases, had murmurs of mitral lesions. Nine, 7.7% of the total series, represented lesions of the aortic valve and aortitis, while four were thought to represent both aortic and mitral lesions. Of the 29 in this group four (13%) died, representing 50% of the total deaths. In the eight patients with murmurs thought to be functional or due to temporary insufficiency, five showed a disappearance of the murmur after operation.

Cardiac Enlargement: Thirty-two patients (27.5%) had clinically enlarged hearts. Sixteen of these patients showed a definite levogram or left axis deviation in the electrocardiogram. Twenty-four (75%) of them had chronic cholecystitis and 8 (25%) had acute cholecystitis. Of the 16 patients showing the levogram, 3 had acute cholecystitis, which is 31.3% of the acute cholecystitis cases in the heart enlargement group, and 18.7% of the levograms in the same group; whereas, 13 of the cases with levogram had chronic cholecystitis, which is 54.1% of the chronic cholecystitis cases in the heart enlargement group and 81.2% of the levogram cases in the same group. Four deaths occurred in this group, but were the same patients whose deaths are noted in the heart murmur group. Two of these deaths were of chronic cholecystitis patients and two were of acute cholecystitis patients.

Electrocardiograms: In only fifty-three patients was it possible to carry out complete electrocardiographic study under suitable conditions both before and after operation. In the 53 cases that were properly studied there was nothing of special significance in the electrocardiograms. There were noted occasional abnormalities, some of which have been mentioned, but there was nothing which can be said to be typical of the heart in the gall bladder patient, with the possible exception of the presence of a levogram. In 37, 70% of the electrocardiographically studied patients, there was a definite left axis deviation and 30% of these presented clinical enlargement of the heart. This seems to be a rather high percentage of levogram and it may be of some significance that 62% of the levogram patients had also obesity. This can be suggested only, however, because 67.3% of the total patients in the series had obesity, and there were 14 (38%) levograms occurring in patients without obesity. There is, however, one bit of analysis which seems to suggest more strongly a connection between the obesity and the levogram as shown by study of the levogram incidence per decade, which does not closely parallel the age incidence. There was no levogram present in the second decade and only 13.5% in each of the third, fourth and fifth decades, 9.2% in the seventh decade and 2.7% in the eighth decade and 47.6% in the sixth decade. Only 21.5% of the total cases occurred between the ages of 50 and 60, but 47.6% of the levograms occurred between the ages of 50 and 60, which may be interpreted as the age at which obesity is more commonly present and that sufficient time has elapsed for obesity to have produced its effect, if any, upon the electrocardiogram. It may be said, however, that wear and tear, especially in the presence of hypertension, at this age is likely to be a factor in the production of the levogram. Hypertension was notably absent in this series of cases, however.

Other Changes after Operation: There was nothing characteristic in regard to the blood pressures. Six patients gave an increase of blood pressure of more than 10 mm. after operation (5.3%), while 21 showed a decrease of more than 10 mm. after operation (18.1%). Six of the patients showing a change in the blood pressure post-operatively had acute cholecystitis, five of these changes being a decrease. Only four patients showed a complete disappearance of jaundice within two weeks after operation. In the entire series there was but one case which suggested a relationship between the heart inflammation and gall bladder infection. This occurred in a girl of thirteen years who suffered an attack of severe tonsillitis followed closely by an acute cholecystitis for which she was operated. During convalescence from the operation she developed an endocarditis of moderate severity which eventually left her with a mitral insufficiency. Bacteriological study of this case failed to reveal evidence suggestive of similarity in the heart and gall bladder infection.

Laboratory Findings: In thirty cases guinea pigs were inoculated with material from the gall bladder. There were only two guinea pig deaths, both of which were thought to be from contamination, one with staphylococcus aureus, the other with pneumococcus. Neither one showed infection of the gall bladder. Other pigs were killed with entirely negative findings. Cultures were made from the gall bladder contents from thirty-six patients, resulting in growth in only six instances, one growth of staphylococcus aureus, one growth of staphylococcus aureus and albus, and four growths of gram negative bacilli which were non-gas producing (colon bacilli). Smears of content matter in the same cases showed nothing different from the cultures. Serial sections of the gall bladder showed nothing more than round cell invasion. There was nothing which resembled in any way Aschoff bodies. About 30% of the removed gall bladders contained stones.

Summary and Conclusions

One hundred and sixteen operative patients with gall bladder disease were studied with par-

ticular reference to the presence or absence of associated lesions of the heart.

Approximately 80% of the patients were females. Approximately 70% were definitely obese. Since obesity occurred in 70% of the total number of females and in only 37% in the total number of males, it is suggested that the preponderance of females in this series of patients may be associated with the preponderance of female obesity. Approximately the same percentage of the acute and chronic lesions occurred in obese patients.

The mortality in this series was no higher than the general operative mortality in the same hospital. Fifty per cent. of the deaths occurred in patients who had lesions of the heart, as shown by the presence of both murmurs and enlargement, yet only about 25% of the total cases presented heart lesions. This seems to indicate that there is no more of an association between heart disease and gall bladder disease than the incidental one to be expected with any series of patients of the same ages. The patients with heart lesions who died showed abnormal electrocardiograms but nothing to indicate a particular association with gall bladder disease. These particular patients would have been probably no better or poorer risks with any other complication than gall bladder disease. That 50% of the fatal cases showed marked jaundice is considered an indication of the severity and length of the existence of the infection.

There were strikingly few bradycardias and little in the effect of operation upon the pulse rate to indicate that an increase or a diminution of the bile salts circulating in the blood affects consistently the rate or rhythm of the heart beat.

Approximately 36% of the patients gave a history of definite precardiac disease, differing slightly or not at all from any other series of patients of the same age incidence.

In five patients a cardiac murmur disappeared after operation, indicating no more frequent functional insufficiency of the myocardium in this study than would be expected from any other group of patients with severe organic disease and undergoing major operative procedure.

Electrocardiographic studies revealed nothing significant with the exception of a predominant levogram in 70% of the patients studied by electrocardiogram. Thirty per cent. of these presented clinical enlargement of the heart, whereas 62% of them were obese, suggesting a relationship between obesity and levogram. There is a suggestive relationship between chronic cholecystitis, heart enlargement and levogram.

There was nothing characteristic in the blood pressure levels of the patients with cholecystitis.

There was nothing characteristic in the bacteriology of the gall bladder contents. Many of the gall bladders seemed to be sterile. There was nothing in the study of the walls of the gall bladders to suggest inflammation of the rheumatic type.

The general conclusion is that there is no definite relationship between gall bladder disease and disease of the cardio-vascular system. The patient with gall bladder disease who also has organic lesions of the heart is no poorer risk than he would be for any other operative procedure of similar severity. A small percentage of patients with gall bladder disease may show the effect upon the heart muscle of increase or diminution of the bile salts in the blood. There is a suggestive relationship between obesity and gall bladder disease.

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HEALTH WORK IN INDUSTRY

BY HALSTEAD G. MURRAY, M.D.,* AND EVELYN COOLIDGE, R.N.*

THIS article is written in an endeavor to show what may be expected of a medical department in a small factory, and with the hope that others who have charge of medical supervision in small plants may be stimulated to publish the results of their work. Thus we may have something to go on for comparison. The material used in this article is based on the health work done at the branch factory of the Dennison Manufacturing Company located at Marlboro, Mass. The product manufactured is fancy paper boxes for commercial use, such as, powder boxes, tie, handkerchief and candy boxes. There is an average of 324 employees, females 228—males 96. The buildings are new and of the latest type for light manufacturing purposes. Lighting, heating, ventilation and sanitary conditions are of the best. The hours of work forty-eight per week.

The health department is located on the first floor and is connected with the employment department offices. There is a small reception room, a so-called treatment room with the necessary supplies and equipment for handling minor injuries and minor ailments; a physician's office, which is used as a men's rest room; and a large women's rest room containing six cots, with blankets, electrical heating appliances, and the like. Persons requiring the use of these rest rooms are allowed to do so, without loss of remuneration, for a period of thirty minutes in each working period. A graduate nurse is in constant attendance during the day and the phy-

*For record and address of author see "This Week's Issue," page 1349.

sician gives between four and eight hours a week to this plant.

PHYSICAL EXAMINATION

All employees are required to have a physical examination before they are definitely hired. Less than one per cent. are rejected for employment on account of physical defects or actual illness. During 1927 and 1928 no one was rejected for employment on account of physical disability.

There are only a few jobs on which the average individual, who is selected by the employment department, is not able to work. Employees are rated "A", "B", "C", and "D" as regards their physical fitness; "A"—persons with no appreciable physical defects, "B"—persons with minor defects, "C"—persons with major defects, and "D"—persons with defects or diseases which make them a danger to themselves or to others if allowed to work at that time. Many of these persons have had such defects remedied and have later been employed at suitable work.

Every employee is invited to have a yearly physical examination given by the nurse and the factory physician. It is entirely voluntary with the employees as to whether they take the examination. This plan went into effect in January, 1926, and in 1927 all but three employees took the re-examination voluntarily. In 1928 all employees took the examination, these three included.

It is generally agreed that a voluntary examination is more conducive to good results and to better co-öperation between the patient and the examining physician. Experience has shown that practically all these people are interested in and favor this yearly examination, so long as they have confidence in the company, that these examinations do not work to their detriment. Unfortunately there is still some suspicion of physical examinations in industry, but this suspicion on the part of the employees is fortunately becoming less each year.

TABLE I

RATINGS AND COMMON DEFECTS FOUND AT EXAMINATION

Examinations and Ratings	1927	1928
Total	395	388
"A"	10	11
"B"	318	311
"C"	67	64
"D"	0	0
Common Defects		
Eyes	67	55
Ears	39	36
Teeth	105	89
Throat	14	26
Nose	1	10
Heart	10	14
Lungs	37	40
Hernia	3	4

When correctable defects are found, the persons examined are told of their condition and advised to see their own physicians, dentists, and oculists for corrective treatment. They are also given advice and printed information on such subjects as personal hygiene, vision, dysmenorrhea, constipation, diet, posture and other related subjects.

TABLE II

MINOR DEFECTS

Defects	Correctable	Corrected
Weight	72	2
Vision	12	2
Wax in ears	26	20
Nose	9	2
Teeth	106	46
Tonsils	25	6
Blood pressure	10	7
Hernia	3	0
Posture	16	3

The total number of employees having re-ëxamination during 1928 was 292. Table II shows the common defects found in 1927 and the number corrected at the time of re-ëxamination in 1928. These persons had corrected as fully as possible more than 31% of the correctable defects listed and a larger per cent. had made progress towards full correction. The showing seems creditable and worth while.

MINOR AILMENTS

Employees are invited to use the factory clinic for advice in matters pertaining to health or sickness, and also receive treatment for their minor ailments. As in all industries and mercantile establishments, the most common ailments are infections of the upper respiratory

TABLE III

NUMBER OF ACCIDENTS AND COMMON MINOR AILMENTS CARED FOR AT THE FACTORY CLINIC

	1927	1928
Patients	4071	3931
Visits	5425	5308
Accidents		
Severe	0	0
Serious	3	6
Minor	665	689
Total	668	695
Common Minor Ailments		
Headache	386	429
Grippe	0	2
Upper respiratory	643	669
Conjunctivitis	13	14
Dysmenorrhea	307	307
Constipation	144	79
Indigestion	351	319
Boils	5	6
Employees sent home or to hospital	25	34

tract. In Table III are shown the number of persons treated at the clinic with the total number of visits, the number of accidents and the common ailments treated; minor accidents include all injuries no matter how trivial they may seem. In 1927 and 1928 no lost time resulted on account of infections; this is probably due to the ease with which employees may get their minor injuries treated at the time they are injured.

LOST TIME ILLNESS

All employees who are out of the factory on account of illness of three or more days' duration are asked to report to the clinic when they return to work. This is done to see that employees do not return to work before they have sufficiently recovered, that they are fit for their work and that they may not bring in contagious or infectious diseases. Quite a number during a year will return too soon, still "running temperatures" or too weak to really work without endangering their health. Table IV shows lost time for 1928.

From these figures it is seen that the average amount of lost time per person for illness is below the average for industry as a whole throughout the country and that the lost time for all reasons is low also.

SUMMARY

1. Annual physical examinations in industry can be conducted on a voluntary basis with 100% of the employees accepting the examination.

2. Employees are interested enough to have 31% of their correctable defects corrected.

3. A dispensary with a full time nurse and part time physician is used to advantage by practically all employees for medical advice and treatment of minor injuries.

4. The total cost for this health work in this branch factory is approximately $2000 a year.

5. The results to the employer and employee in less lost time from sickness and from an obviously healthier working force seem to justify this expenditure easily.

TABLE IV

LOST TIME DUE TO ILLNESS AND ACCIDENTS

Number Men	Number Women	Reason	Lost days
	9	Surgical operations	500
	1	Non-industrial accidents	60
1		Industrial accidents	200
	5	Contagious diseases	162
2	33	Indigestion	43
7	33	Upper respiratory	311
1	11	Miscellaneous	129
Total number of days lost for illness			1205
11 persons lost			551
Average lost time per person for illness and accidents			3¾
Average lost time for all reasons			7½

HEALTH OF PUPILS IS FOSTERED BY IMPROVEMENT OF SCHOOLS AND PROVISION OF ADVICE TO PARENTS

An official of one of our largest life insurance companies in a recent address to the Association of Life Insurance Presidents said, "The public school, through its health instruction and medical inspection, has been a primary factor in spreading the knowledge of hygiene in the home." From its beginnings the United States Bureau of Education, of the Department of the Interior, has been interested in promoting the health of the school child.

The specified work of the Bureau is that of collecting information, and giving forth such information as it considers valuable, to educators and others who are interested. This, so far as health work is concerned, it does through its Division of Physical Education and School Hygiene.

Realizing that material conditions of school life may affect the health of the child, the Bureau furnishes information regarding the construction, equipment and care of school buildings, and the provision of suitable playgrounds. The Bureau believes that schools should not only prove healthful homes for the children housed in them for a thousand hours a year, but that they should serve as object lessons in good sanitation.

Nor has the Bureau overlooked the fact that the welfare of the teacher is essential to her best work and longest service, and one of its important recent publications is entitled "The Health of the Teacher."

The following titles of some of its publications indicate the ground covered by this Bureau along lines pertaining to the preservation and promotion of the health of the school child: "Diet for the School Child"; "Suggestions for a Program of Health Teaching in Elementary Schools"; "Milk and Our School Children"; "Sleep"; "Dramatics for Health Teaching"; "The Kindergarten and Health"; "Suggestions for a Program for Health Teaching in the High School"; "Helps for the Rural School Nurse"; "What Every Teacher Should Know About the Physical Condition of Her Pupils"; "Is Your Child Ready for School?"; "Better Teeth"; "Health for School Children"; "Health Promotion in a Continuation School".—*The United States Daily.*

VERMONT STATE MEDICAL SOCIETY

TREATMENT OF PERNICIOUS ANEMIA, ESPECIALLY BY LIVER*

BY ROGER I. LEE, M.D.†

Mr. Chairman and Members of the Vermont State Medical Society:

PERNICIOUS anemia was best, first, and finally described by Addison, near 100 years ago, in 1849. If anyone wants a brilliant example of a clinical description he should turn to that description of Dr. Addison of pernicious anemia. Recently, however, certain details have been added to the description of pernicious anemia. Those have been important in the understanding of the disease. In the first instance, we have come to recognize the frequent occurrence of lesions and symptoms of the central nervous system in pernicious anemia. We find that some cases of pernicious anemia run the course of a combined system disease with little in the way of symptoms of anemia. In the second instance we have found gastro-intestinal lesions and symptoms almost universally in pernicious anemia. There is the well-known sore tongue, indigestion and diarrhea, and lack of acid in the stomach. Those observations are very important and will be discussed in detail later.

The diagnosis of pernicious anemia has nearly always, and properly, been made on the basis of the clinical history. It is quite the fashion to say that you can make an absolute diagnosis of pernicious anemia by the microscopic examination of the blood. That, in my opinion, is not always accurate. There are many other conditions which, at some time, will show a blood which at that given time may be indistinguishable from pernicious anemia. There is the typical blood picture of pernicious anemia, with high color index. Here I want to emphasize what Dr. Thayer has pointed out, the fallibility of the laboratory test, and, in my experience, of the red count. The red count is only too often treacherous. In a typical case of pernicious anemia, it runs about 2,000,000. With a properly done red count of 2,000,000, or under, in an ambulant patient, with a hemoglobin of 70%, one has a diagnosis of pernicious anemia, and with an improper count one gets confusion. Especially in the so-called relapse, but constantly in all stages of the disease not under liver treatment there is increased blood destruction. This blood destruction may be demonstrated by the color of the patient, the well-known lemon yellow color, by the increased amount of blood pigment in blood stream, in the duodenal contents, or in the stool.

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†For record and address of author see "This Week's Issue," page 1349.

The pathology we recognize. However, we don't know the significance of the pathology which we find and which we recognize.

I have alluded to the increased blood destruction which is constant in pernicious anemia. Following this lead workers have tried to run down the possible hemolytic agent. Practically every organ in the body has been accused, and practically every agency has been accused. It was thought, at one time, that possibly it might be some bacterial toxin, and many individuals spent a great deal of time finding the Bacillus Welchii in stools, and were able to produce a profound anemia in animals with the toxin of the Bacillus Welchii. The same thing occurred with intestinal worms. It took a long time before we appreciated that there were two horns of the dilemma and that one could imagine red blood corpuscles which might be unduly susceptible to destruction. In recent years the best opinion has been that these red blood corpuscles in pernicious anemia are abnormal and are more readily destroyed than are the red blood corpuscles of the ordinary individual.

In the early days all forms of treatment were tried. Pernicious anemia, with its bizarre course,—offered a great field for the exploitation of a great many remedies. Nevertheless, none of the so-called agents seemed to have any effect. Many of the older clinicians stuck warmly to the exhibition of arsenic. In recent years more specific therapy was tried. Patients were given transfusions. It was possible to take a patient with a very few red cells, and to fill that patient up with red blood corpuscles of appropriate donors. Transfusion has not always been successful. It was recognized that pernicious anemia blood was an unusual blood, and reactions were common. It is much more common to get marked reactions in cases of pernicious anemia than it was with individuals who had lost blood by simple bleeding. The transfusion only acted temporarily. Splenectomy was tried. The taking out of the spleen did not remove any haemolytic agent, but caused some economy of the blood corpuscles. We have to theorize a good deal about the effect of splenectomy, and of course it does have some value, but that value is limited. With these methods of treatment, with the exception of filling of the patient with blood, and when the patient himself was undergoing a very marked, spontaneous remission, it was very rare to have that patient's red blood count over 4,000,000.

Rather abruptly came some very interesting

work by Dr. George H. Whipple, then of San Francisco, and now of Rochester, N. Y. Dr. Whipple, working with dogs, found that he could get, by repeated bleeding, the dog in a fixed state, so that he could gauge accurately the effect upon that animal's blood, of any particular remedy. He tried various kinds of food, and some of them showed a certain beneficial effect. He tried certain meats on his dogs and found that liver, beef or pig, caused a very much more profound increase in the red corpuscles in his anemic dogs than did any other method or diet. The clinicians seized upon this, and the anemic diet became a common fad all over the country. They took all the foods suggested by Dr. Whipple and treated the patients with anemia, primary and secondary anemia, in this fashion. The results were not particularly encouraging until Doctors Minot and Murphy suddenly discovered that instead of small amounts of liver, large amounts of liver were desirable. Whereupon they found a perfectly extraordinary thing. They found that in the patients who were given large amounts of liver steadily, improvement always took place in pernicious anemia, and that improvement was rapid and constant. A very sick patient with a blood count of a million would gain about a million red blood corpuscles a week, and at the end of a month that patient would be up to 5,000,000 red blood corpuscles, provided that patient took enough liver and took it constantly. And please note that in these cases the patient increased his red blood corpuscles, not up to 3,000,000 or 4,000,000, which is the high point of normal remission in pernicious anemia, but increased the red blood corpuscles up to 5,000,000, which is the amount of the normal individual.

At first an elaborate diet was put out, with various complicated modifications, but finally it was found that the liver was the essential factor in the diet. Although now a liberal mixed diet is administered, the important factor in that diet is the liver. It was soon found that any mammalian liver would do. That the liver of fish or cod would not do. It was found that many of the animal products contained this substance in small amounts, and might be of some assistance. This substance, which controls the disease, was not found in any considerable amount in the vegetable kingdom. It made no difference whether that liver was cooked or was not cooked, or how it was cooked. The dietitians devised all kinds of wonderful methods of preparing liver. We had liver soup, liver sausages, and liver ice cream. It didn't make any difference, as long as the persons took the liver. Most of us found, in actual experience, that instead of making suggestions to the patient as to how to take the liver, you would look at them, with the well-known glassy, cold eye of the doctor, and say, you eat one-half pound of liver, a day, and I don't care how you take it.

One other surprising thing was, that as the patient took this liver, certainly one-half of them preferred to take it raw. That sounds rather unpalatable, but they measured out this amount of liver necessary to take, had it ground and put it in with a little orange juice or ginger ale, and then shut their eyes and took several frantic gulps and got it down for the day.

It was obvious that it was not the whole liver, but some substance within the liver that was beneficial. The chemical laboratory found it not at all difficult to get an extract of this liver which was just as effective as the liver itself. This extract, in the chemical laboratories, was not particularly difficult to produce. Unfortunately, the mass production of this liver extract has not been so easy, if one is acquainted with the experience of the Eli Lilly Co., which undertook that mass production of the liver. The expense of the liver extract is considerable, however, with every patient in the world eating liver, calves' liver has got up to 80 and 90 cents a pound, because people preferred that to pig's liver.

However, economical people take pig's liver raw. The last word has not been said in regard to this liver extract, and the mass production. Of course, eventually, the Eli Lilly people will get a stable product on the market, which will be a great deal of benefit to the patients. In the short interval in which liver extract was not available, we had an opportunity of testing out many other extracts, and in those rather hurried weeks we found that the other liver extracts were not particularly potent. It also seems that in all probability, as far as we can tell, clinically, that the liver extract now on the market, by Eli Lilly Co., is not as potent as the extract which can be produced chemically in the laboratory or as the liver itself. But it seems to be only a question of time before a satisfactory liver extract can be produced. At the present time I think it is the custom of most of us to encourage the patient to take as much liver as he can in what way he chooses, and to supplement this by the liver extract when he can't get the liver. We feel that until the situation is further advanced, a person cannot depend upon the commercial extract alone, but has got to take some liver.

The results of this treatment have been perfectly remarkable. The anemia is held in abeyance, the red count goes to 5,000,000, and the person regards himself as well. That person does not get rid of all the symptoms and signs of the disease. The symptoms that are traceable to the central nervous symptom occasionally, but not often disappear. Actual changes in reflexes do not disappear. Furthermore, the acidity of the stomach does not return, and as far as I know, has not been described as returning in any case. The general indigestion disappears, and the patient feels well, but that individual does not get his acid back. If the person stops taking liver, that person will have a lapse back into pernicious anemia. The continuing dose varies enormously in the patient. One patient of mine who has been on liver for well over four years, only needs a small amount of liver to keep him well. Perhaps he is in a spontaneous remission, and the liver in small

amounts keeps him there. But, as far as we know any patient giving up his liver, will go back to pernicious anemia. As complications, there have been reported a few cases of gout which one might assume would ensue in people on such a diet.

Of a good deal of interest is the significance of all this. It is evident that liver does not cure this condition. Is pernicious anemia a diet deficiency disease? The evidence seems to be that it is not. Vegetarians are no more apt to develop pernicious anemia than meat eaters. It presumably is a disease of the red blood corpuscles, and the liver, or its extract, has some action upon the red blood corpuscles in supplying the red blood corpuscles with something that is lacking. In a few instances the bone marrow has been studied before and after the liver treatment, and it is found that the bone marrow, while typical in the height of disease, has returned to normal with the administration of liver.

There is, of course, a great field for further study of the disease. We have simply scratched the surface. One feels that the absence of hydrochloric acid in the stomach has something to do with the disease. There is a certain amount of work showing that pre-digested protein given to these individuals has a beneficial effect, perhaps not as marked as liver, but a very marked effect.

Pernicious anemia apparently is controlled by the administration of liver, and the important factor in the administration of liver is the administration of an adequate amount of liver, whether as liver itself or the liver extract. There is no difference in the method of taking this liver, whether it is raw or cooked, or what form of liver, as long as mammalian liver, and that various other internal organs can be substituted for the liver.

Discussion

Dr. French: *Mr. President, Ladies and Gentlemen*—I want to begin by asking a question or two. In the first place, I understood, in talking with Dr. Lee this morning, that at present you are not using hydrochloric acid in conjunction with liver diet. The cases I have seen have all had hydrochloric acid. And it is reported that they do just as well without it, but I wondered if the lack of hydrochloric acid in the stomach may not be a factor in the production of pernicious anemia, and if continued over a longer time might not be of help in producing a cure. I am sure there is some definite reason for leaving off hydrochloric acid, and I wish you would explain the reason to us.

In regard to telling the patient to eat liver, I have understood there were superior people in Boston, and I think there must be, because Vermonters, if merely told to eat liver, don't seem to do it very well.

I have here a few blood counts, done on a Vermonter, who in November, 1925 had a red cell count of 1,700,000, haemoglobin, 60. At that time he was able to eat liver. In 1926, August, his red count was 2,400,000. In October it was 3,920,000. Then another count was not done until May, 1927, at which time it was 4,200,000. He then went to Florida and spent the winter. He got very sick of liver and practically gave up eating it; and later on was put on a liver extract, which was not Lilly's. He came back, and in May of this year had 1,880,000 red cells. He began taking liver in a half-hearted way, and two months later had 2,800,000. He then began taking rather large amounts of liver and his blood count had gone up about 500,000, i.e., 3,200,000 with 68%. He died of bronchial pneumonia at this time. I think this shows what happens if a man is told to eat liver, and isn't checked up rather carefully.

It seems to me that the question in regard to pernicious anemia, from the point of view of the general practitioner, which is most important, and much less often discussed, is this. Just exactly what are you going to give to a certain particular individual? We know that some of these people with pernicious anemia have no digestive upset, can eat liver in whatever form they prefer, and there is a rapid improvement of their blood. Others vomit and have gastro-intestinal upsets, and it is nearly impossible to get them to take liver at all. Then there is a third class, which lies between those two extremes. If we must prepare the liver, the question comes, how are we going to prepare it? And that question, it seems to me, should be best answered by the patient himself, since we do not care how he gets the liver as long as he gets it. If he gets sick of taking it, his blood soon shows the result, and therefore, we must try to make things palatable as far as possible. If the patient is vomiting, it may be that the liver ground up and given in some vehicle is the best way. So perhaps the extract is the only thing he can take, and keep down. If the patient is following the liver diet in a half-hearted sort of way, like the man I have just referred to, I believe he can be straightened around, as this man was, by explaining to him the exact reason, so far as we know it, for giving the liver diet, and then fixing the responsibility upon that man instead of his family. In this case the man had been told he must eat liver, nobody told him why, and the responsibility of preparing it had been placed upon his wife. She cooked the liver in the same way every day, and soon he wasn't eating much if any. I believe with all people you can get along as we did with him. As soon as he was told why he would have to eat liver, and what results he should expect if he did not eat liver, he himself began to insist upon having it, and inside of a week from the time the explanation was given him, he was insisting upon having half a pound of liver twice a day, which is plenty.

Everyone has noted the rapidly increasing anemia that follows a diet poor in liver, and the miraculous improvement after three or four

days of a liver diet. It is more marked in recent cases, and much less marked in cases which have had several transfusions, or a number of remissions, where their red blood count has been very low.

It seems to me that the thing that interests us Vermonters is, first, to get the co-öperation of the patient, which can be done by explaining to him as much as we are able, the reason for eating the liver. Second, to provide the liver in a palatable way. Third, to check our results with an occasional blood examination.

I think it is now generally thought that a balanced, liberal, general diet, plus sufficient liver, is all that is necessary. When we began using liver diet we followed the rules carefully, but later patients have not followed them as carefully, and so long as they have had their allotted amount of liver the results seem to be just as good.

In the case of a patient to whom liver has become very distasteful, I have found that grinding up the liver so there was nothing but a pulp left, putting that in about two-thirds of a glass of orange juice, and giving it to him to take, say at ten o'clock in the morning and three o'clock in the afternoon, when it doesn't spoil his appetite for meals which follow, permits him to sit down to a meal with the family and enjoy the meal without having to swallow the liver, which has become so distasteful to him.

Dr. Bellerose: About hydrochloric acid, in the treatment of pernicious anemia, I would like to report the observation of a case, that I have had. A woman, of about forty years of age, began to have pernicious anemia about four years ago. She has had three relapses, and I believe is in her third remission. She had her second relapse in 1927, when she was given liver, and then she ate as much liver as she could take. She began to improve on the liver diet, until about the same time in winter, that she generally had her relapses, and she gradually grew worse. She came to see me about the first week in April and was carried into my office, by two of her friends, as she could only walk with great difficulty, having involvement of the posterior columns of the cord. There was no blood count made at that time, but it was taken for granted, because two years ago she had a red blood count of 2,000,000, and a hemoglobin of 55%. She had a typical blood picture, and symptoms of pernicious anemia. She had a liver diet for a few months, and then would not eat any more liver. In fact, she could hardly eat anything. She was put on the old treatment, of Fowler's solution and Hydrochloric acid, diluted, 20 minums in a glass of water, after meals. As for diet, she was told to take whatever she could eat. She commenced to develop a little appetite, and she was kept on Hydrochloric acid and arsenic, and she steadily improved. After two months she could walk to my office with a cane, and after two more months, having recovered her appetite, as she could eat anything, I proposed for her to take more liver, but she refused, so she was given liver extract, in orange juice.

At present, she walks alone, with a cane. Her last blood examination showed 4,190,000 reds, and a hemoglobin of 76%. She has gained strength and flesh and her physical apperance is certainly much better.

Now I believe that in this case, Hydrochloric acid certainly helped this patient to develop an appetite, and to digest her food. As we know, in pernicious anemia, Hydrochloric acid is absent in the gastric juice, and I believe that Hydrochloric acid has helped to prolong this patient's life.

Now Hydrochloric acid has not cured any case of pernicious anemia, any more than liver, but the combination of the two seems to be a rational treatment.

*Dr. Beecher: There is one thing that Dr. Lee didn't bring out, but suggested, the difficulty in getting liver, or liver extract, which emphasizes the point. You know what is going to happen. Every case of anemia is going to have liver, and secondary anemias are not at all, or very little, benefited by liver, and it is easier differential diagnosis to do a therapeutic test on a case of anemia. It is better to do Dr. Fowler's physical examination, and add a blood test.

Dr. Lee: I cannot answer Dr. French's question as to why we have stopped giving the hydrochloric acid. We used to give it when we gave the anemia diet, because we wanted to do every possible thing. We have now found, in most of these instances, that the liver does the work, and that it is not necessary to give them hydrochloric acid. We give it occasionally when we think there are local gastric symptoms.

Dr. French's account of his patient was an excellent one. That is what usually happens when individuals get an insufficient amount of liver. We never want to forget the fact which made us hestitate about being enthusiastic over liver,—that pernicious anemia is a bizarre disease and will go through spontaneous remissions and relapses. My experience is that the liver is the only treatment except transfusion which will give red counts of around 5,000,000. These patients must have liver and must be checked up. It is my custom to have these patients come back when they begin to take liver, at least once a week. If they don't gain their million red cells a week, or thereabouts, they are not taking enough liver. It does not make any difference how they take it. My experience is that the patients are going to get sick of liver, no matter how tastily it is given. They usually go back to taking it raw, ground up, and swallow it in a few gulps and have it over with for a day.

We have had very little difficulty with vomiting patients, but in some cases you may have to perform transfusion in order to tide patients

*Remarks not edited by Dr. Beecher.

along so as to get them to take liver. Whether we give it by stomach tube, or persuasion, or how, they must take liver, and in large amounts.

OBITUARIES

GEORGE F. HUBBELL, M.D.

Dr. George F. Hubbell of Marshfield was found dead in bed at his home in that town June 13, 1929.

He was born in Fairfax, June 19, 1874, graduating from the Medical department of the University of Vermont.

Dr. Hubbell was for several years postmaster at Northfield, Vermont. He was married in 1899 and has one child by this marriage. He is survived by his second wife and a son of Hackensack, New Jersey.

J. S. EASTWOOD, M.D.

Dr. J. S. Eastwood of Bristol died at the Mary Fletcher Hospital in Burlington, June 12, 1929 in his sixtieth year.

He was born in Brattleboro, attending the public schools of that town and was a graduate of Tufts College, 1894, also University of Pennsylvania in 1898.

He was an ardent Episcopalian, a Knight Templar, and a Shriner. He was a member of the County and State Medical Societies and the American Medical Association.

He is survived by his wife and two sons. The funeral services were held at St. Thomas's Church and the burial was in Brattleboro.

DR. LEON H. GILLETTE

In the death of Dr. Leon H. Gillette, on April 25, 1929, Springfield loses one of her most able and best known medical men.

Dr. Leon H. Gillette was born in Whitingham, Vermont, March 15, 1869. He attended school at Whitingham and at Bernardston, Mass., graduating from the medical department of the University of Vermont in 1891. He was a charter member of Phi Chi fraternity.

He began the practice of medicine in Whitingham, where he took the practice of his grandfather, Dr. Waters Gillette.

About 1895 he went to Wilmington, Vt., where he was associated with the late Dr. E. J. Titus for some time.

In 1905 he sold his practice in Wilmington and moved to Springfield. Later Dr. Gillette took special courses in surgery at the New York Polyclinic and at Rush Medical.

Dr. Gillette belonged to a class of doctors that is fast disappearing in this country, the old-time general practitioner.

He was thorough in all his work and he played a large part in the establishment of the Springfield (Vermont) Hospital.

He was a member and past president of the Windsor County Society, of the Vermont State Society, of the American Medical Association and a member of the American College of Physio-Therapy.

He is survived by a wife and four children.

MISCELLANY

WASHINGTON COUNTY NOTES

Dr. J. A. Wark attended the Meeting of the Massachusetts Medical Society held at Boston, June 10-14.

Drs. D. C. Jarvis and C. H. Goyette have been appointed by the Department of Commerce Aeronautics Department as examining physicians for airplane pilots.

Dr. J. W. Stewart is spending ten days in Chicago on a business and pleasure trip.

The Monthly Meeting of Barre City Hospital Staff was held at the residence of J. H. Woodruff, M.D. Several interesting cases were discussed. Luncheon was served following the meeting.

Dr. Wm. McFarland was in Boston recently on business.

Dr. W. E. Lavelle is enjoying a short vacation in Buffalo, New York.

Dr. Wm. Hutchinson of Chelsea is selling out his real estate preparatory to leaving town. He is going to locate in Richmond, Vermont.

Drs. J. A. Wark and C. H. Goyette attended the Medical Alumni Dinner of the University of Vermont held at Burlington June 15. Dr. Goyette was elected Sixth Vice President of the Vermont Alumni Association.

VERMONT DEPARTMENT OF PUBLIC HEALTH MAY, 1929

Reports of communicable diseases for May are as follows: chickenpox 74, diphtheria 2, German measles 55, measles 48, mumps 95, scarlet fever 65, smallpox 26, typhoid fever 4, whooping cough 81 and tuberculosis 21.

The Laboratory of Hygiene made 1325 examinations, classified as follows:

Examinations	
For diphtheria bacilli	113
For Widal reactions	37
For malarial parasites	0
For tuberculosis bacilli	255
For evidence of syphilis	328
For gonococci in pus	99
Of blood for contagious abortion in cattle	56
Of water, chemical and bacteriological	43
Of water, bacteriological	116
Of milk, market	124
Of milk, submitted for chemical only	7
Of milk, submitted for microscopical only	24
Of milk, submitted by Dept. of Agriculture for added water	1
Of foods	7
Of drugs	3
For the courts, autopsies	0
For the courts, miscellaneous	17
Autopsies to complete death returns	5

The Division of Communicable Diseases received reports of 39 cases of gonorrhea and 23 cases of syphilis. Four cases of syphilis and 2 cases of gonorrhea reported for treatment and three cases for intravenous treatment; 93 gonorrhea outfits and 229 Wassermann outfits were distributed.

In the Division of Aftercare for Poliomyelitis 45 home visits were made, one doctor consulted, 11 new pieces of apparatus fitted, 28 orthopedic corrections to shoes, 12 pieces of apparatus were altered or repaired, 2 plaster casts were removed, 1 patient was admitted to the Fenway Hospital and one discharged from the Children's Hospital. The usual spring clinics were held in nine towns, with an attendance of 163 patients. The vocational workers report 14 home visits made, 16 patients seen and sales for the month amounting to $11.20.

The Maternity and Infancy Division carried on "Child Care" courses in five towns, with an attendance of 94 pupils. The nurse visited nine towns, talking before Parent-Teacher Association, Home Bureaus and other organizations.

MEDICAL PROGRESS

THE PROGRESS OF NUTRITION

BY FRANCIS LOWELL BURNETT, M.D.*

The Health of Anabolic Nutrition

"THE chief aim toward which all endeavors should be bent in medicine is the prevention and cure of disease. . . . The gradual development of pathology threw so much light on disease that it helped greatly to raise medicine to a science. . . . It must be recognised that this development is to all intents and purposes restricted to the recognition of disease after it has advanced so far as to have damaged the tissues, a stage which in rare instances does not permit of our attaining one of the chief aims of medicine—cure. . . . There is, it is true, an impression that the methods of diagnosis are so developed that disease is now recognised at the earliest stage at which it is humanly possible to recognise it, and that any phenomena that occur earlier are so vague and indefinite that no clear information can be obtained from them. . . . This view is not justified. . . . The laws of public health and the application of the principles of hygiene have done a great deal in stamping out certain diseases and diminishing the frequency of others, while the recognition of the microbic origin of many diseases has also given the indication of their suppression. . . . So far the greatest endeavors have been spent in elucidating the later stages of disease and progress demands that the predisposing and early stages should be investigated with equal thoroughness and energy. In order to do this other fields must be explored, other methods used, and other individuals employed." (MACKENZIE, J. The Future of Medicine, Oxford University Press 1919).

The cure of disease is accomplished by the restoration of health. From investigations of disease in the past the morbid processes have become more clearly defined and etiological agents better understood; yet, at present, a large group of diseases remain which are generally supposed to be of metabolic origin. The inception of these diseases seems to be very obscure, their course protracted, and their determination impossible except in an advanced stage; but they appear to be associated with a patient's ways of eating and mode of living. The restoration of health after diabetes is largely brought about by reducing the food and especially the carbohydrate. Did the excessive consumption of starchy food cause a degeneration of the cells in the islands of Langerhans? Probably it did. Pernicious anemia is cured by the ingestion of a high protein, especially liver, diet. Through the ingestion of insufficient protein or liver was there a failure of nutrient substances to be assimilated by the marrow to keep it normally nourished and healthy? Perhaps so; for Whipple makes the assertion that "pernicious anemia may be classed as a deficiency disease, and due to a lack of something." That nutrient substances do build up cells has been shown by the interesting work of CARY and MEIGS (*J. Bio. Chem.* 78: 399, July '28) on tryptophan. In this investigation the blood of cows was taken simultaneously from the jugular and mammary veins and examined. In this way the amount of tryptophan remaining in the blood after passing through active mammary glands was found to be 17% less than that from the neck. Do other functioning cells require different nutrient substances to be normally nourished and healthy?

The purpose of consuming food is to nourish the body; but on account of the delicate, intricate, and correlated processes of tissue construction and repair, essential or anabolic nutrition is only little by little becoming understood. The digestive system was designed to nourish the body, but as yet a measure of the digested products which the body recovers from this tube has not been established. On the other hand, if the alimentary canal is regarded as a highly perfected nutritive apparatus, and the indices of absorption are applied as a basis of nutrition, the vitamins as well as faulty food factors have to be adjusted and maintained in order to keep the aliment passing through the nutritive apparatus within the presumably normal limits of absorption. This procedure evidently gives a clue to the anabolic processes. Therefore, from this point of view the cure of disease and the restoration of health may not be so much a matter of knowing more about disease as it is understanding the requirements of a state of health. On this presumption all of the cells must generally receive certain nutrient substances to be normally nourished and healthy. In a specific infectious disease like tuberculosis the tissue affected apparently has an inherent weakness, as this disease may occur primarily in almost every tissue in the human body. Similarly, in anabolic malnutrition the effects of such a deficiency may be manifested primarily in a weak skin, bone, marrow, nerves, etc.

However, this may be, with an understanding of the principles for the acquisition and control of the health of anabolic nutrition BURNETT (N. E. J. MED. 199: 321, Aug. 16, '28) has attempted to cure some of the dermatoses. In this study of the nutrition and health of the

*For record and address of author see "This Week's Issue," page 1349.

skin, many patients had faulty food factors to correct to improve their absorption, and those carrying out the treatment have been cured of dermatoses. Some of the patients, however, do not understand that they are on a diet for the acquisition and control of a state of health, fail after a while to make the necessary checks on the indices of absorption, and have a recurrence. Again, they must correct some erroneous ways of eating, because the health of the skin is evidently dependent on constantly receiving specific nutrient substances from aliment completing its cycle of digestion and absorption. Then, others who do not attempt to carry out a reasonable health program are generally malnourished by having nutrient substances go through instead of into them, and continue to have metabolic lesions of the skin.

The health of the skin from anabolic nutrition appears to bear a close relationship to hypersensitiveness. An outstanding study of allergic skin diseases has been made recently by BARBER and ORIEL (*Lancet* II: 1009 and 1064, Nov. 17 and 24, 1928). In this comprehensive and carefully executed work, they found in these patients an increased amino-acid content of the blood, diminished chlorides from increased retention, a rise in the excretion of ammonia, and marked alkalinity of the urine, the deposition of urinary urates, etc. These disorders are explained as the result of hepatic insufficiency. In one group, protein may be absorbed unchanged into the blood through deficient hydrochloric acid and the failure of the proteopexic function of the liver; in the other, incompletely digested protein cleavage products fail to be detoxicated by the liver. In treatment "the clue to the problem lies in the functions of the digestive organs and the liver." A lacto-vegetarian diet is advised in which meat, fish, and eggs are restricted, and the internal administration of ammonia and glucose are given. These measures "have proved of definite therapeutic value in many allergic cases."

THE FUNCTIONS AND LESIONS OF THE NUTRITIVE APPARATUS

In considering the digestive system as a highly perfected nutritive apparatus, variations of the indices of absorption often show an early and slight disorder of nutrition. Minor factors in a person's mode of living affect the action of this sensitive mechanism. The observations of CAMPBELL et al (*Guy's Hosp. Rep.* 78: 279, July, '28) on exercise and gastric action show the effect of this factor on human digestion. Immediately after standard meals, the subjects ran, walked, talked, and rested, and the gastric contents were extracted at half hour intervals and analyzed. Violent exercise retarded the secretion of gastric juice and emptying time of the stomach, but light exercise did not have a marked effect, and talking improved digestion. Then, moderate exercise might inhibit digestion in one subject, but it did not affect it in another. The hydrogen-ion concentration and enzyme content of the duodenal fluid have been studied by NORGAARD and THAYSEN (*Acta Med. Scandinav.* 68: 18, 1928). The fluid varied from pH 8.5-1.0, but in achylia gastrica the concentration is much reduced. With a reaction between pH 6.5-8.5 the action of disastase, lipase, or trypsin was the strongest.

As the indices of absorption evidently serve as an exact means to detect an irritable colon and intestinal indigestion, a study by RYLE (*Lancet* II: 1115, Dec. 1, '28) on the chronic spasmodic affections of the colon is peculiarly interesting. This condition is defined as a common functional abdominal disorder characterized by frequent and prolonged discomfort or troublesome and even severe pain. It is often mistaken for appendicitis, as shown by many scarred abdomens and persistence of the pain. Neurosis, migrane, and asthma are frequently associated with it. Patients are generally lean and pale, they may have had diarrhoea but most of them are constipated. In treatment, attention should first be directed to allaying fears of a serious organic disease. Mental and physical relaxation and a simple mixed diet, with the exclusion of bulky starchy foods and purgatives, are advised. A few drugs may be valuable.

A plea for an understanding of indigestion as an early symptom of organic diseases has been made by LATHROPE (*J. M. Soc. New Jersey* 25: 397, June, '28). The author writes that indigestion is a much neglected early symptom of disease and a careful investigation will often result in finding a large number of organic lesions. Of 224 patients complaining of indigestion only 6 were without a secondary disorder. Among these, cardiorenal disease, bronchitis, pulmonary tuberculosis, and the anemias were the most often diagnosed. An account of intestinal intoxication has been reported by BARTLE (*M. J. & Record* July 4, 18, Oct. 17, & Nov. 7, '28) from a careful study of 50 patients. Of this number fat disagreed with 30%, sugar 22%, acids 14%, fruit 14%, animal protein 14%, and starchy food 2%. In treatment all laxatives containing cascara, aloes, or colocynth are omitted, and replaced if necessary by fruit paste. Training is attempted, and a bland diet advised. Animal protein is not allowed for three to twelve months. Observations and adjustments over periods of months rather than weeks and days must be impressed on the patients; and during this time they must be taught how to eat, live, exercise, and play. Health will not return alone by taking medicine from a bottle. In the treatment of constipation PAGE (*Canad. M. A. J.* 19: 562, Nov., '28) writes there are few patients who cannot be cured with fresh and stewed fruits, figs, prunes, green vegetables and sugar. The result of taking liquid petrolatum by dogs and human beings on the diges-

tion and absorption of food has been made by OLSEN (*J. A. M. A.* 91:143, July 21, '28). The animals were given 20 cc. of oil daily for three periods of a month with intervals of two weeks without oil. The women took 45 cc. of oil daily, but only for a few days at a time, and then went without it for a week or so. Fecal estimations of nitrogen for the oil or normal periods for both dogs and women were similar. The intestinal rates of the dogs were slightly shortened by the oil. One animal lost and one gained weight. All but one of the women lost weight, and the one to gain was nauseated at times. The experiments were too short to be conclusive, but point rather to a deleterious effect than otherwise. WATSON (*Lancet* 1:174, Jan. 28, '28) writes of an unrecognised toxic substance in the human feces. Extracts were made from cleansing enemata and injected intravenously into cats. Those from animals and healthy men had little effect on the blood pressure of the animals, but extracts from patients with melancholia, dysentery, indigestion, pernicious anemia, etc., showed a marked fall of blood pressure.

The cause of gastric and duodenal ulcers is unknown. Animals consuming incomplete food sometimes get them, and on this account they may in time become established as deficiency disorders. In assuming this cause HARRIS (*J. A. M. A.* 91:1452, Nov. 10, '28) has elaborated a diet potent in vitamins for the cure of ulcers. For the first week the patient takes every hour from 7 a. m. to 7 p. m. a cream-milk mixture, then after three of the feedings strained orange juice. During the second week a cereal, or toast, with butter and an egg are added to three of the six meals. Scraped beef or chicken may be added to dinner and supper during the third week; and a general diet of simple foods added to the fourth, fifth, and sixth week. In a section on the hygiene of patients with healed ulcers, the importance of mastication is pointed out, and rich, spiced foods, some fruits, fibrous vegetables, coffee, tea, alcoholic beverages, and tobacco should be avoided. The results of these principles of nutrition are not given. DAVIDSON (*J. A. M. A.* 90:1014, Mar. 31, '28) calls attention to the development of deficiency diseases during the course of feeding for ulcers. On the Sippy and Lenhartz diets ulceration and bleeding from the gums and other signs of specific malnutrition occurred. Orange juice added to the diets relieved the deficiency.

HOISI, ALVAREZ, and MANN (*Arch. Int. Med.* 41:112, Jan. '28) have carried out some experiments on dogs to find a low residue diet. Three animals were employed and given one meal at 8:30 a. m. of lean meat or liver; Swiss cheese; milk; boiled rice, potato, farina, or bread; lactose; pure lard or butter; pineapple; apple, banana, or prunes. The results showed that lean meat was best, while rice or eggs were well absorbed. Various kinds of milk left a large residue, and contrary to common practice should not be a food to prescribe to rest the digestive tract and in diarrhoea. The reaction of the intestinal contents of dogs from various diets has been observed by GRAHAM and EMERY (*J. Lab. and Clin. Med.* 13:1097, Sept. '28). A normal, protein, fat, carbohydrate, and rachitic diet, were fed the animals for two weeks, when they were instantly killed. Then from the duodenum, jejunum, jejunal and iliac juncture, ilium, cecum, and colon, the contents were expressed immediately and the pH determined. The results obtained show that the upper intestine is the most acid, but the acidity is gradually reduced as the ileo-caecal valve is approached; then in the colon the reaction is more acid again. NEVER (*Arch. f. d. ges. Physiol.* 219:554, '28) studied the action and secretion of the digestive system in avitaminosis. The gastric juice is not found abnormal with a slight deficiency, but as the animals become more malnourished there is a disturbance of absorption and secretion and the appetite is affected.

LACTATION, SELECTIVE APPETITE, AND THE NOURISHMENT OF THE YOUNG

Progress continues in determining the effects of specified diets on lactation. A study has been made by KLEINER et al (*Am. J. Obs. and Gyn.* 15:172, Feb. 1928) on the influence of supplementary carbohydrates on lactation. One group of nursing mothers was given the regular hospital fare of 50 grns. of protein, 150 of fat, and 270 of carbohydrate. Another group was given the same diet except that part of the food was replaced by 60 grns. of rice. In a third group tapioca took the place of rice. And a fourth group was given cream of the same caloric value as the starch. Observations were made for six weeks during which the milk was examined and the infants weighed several times. The greatest amount of milk was ingested by infants and secured by the breast pump, on the two starchy diets. Protein was the same in the milk of all groups, but the cream diet produced the most fat in the milk early, but all the milks contained the same fat content on the ninth day.

In a study of the vitamin content of human milk, MACIE et al (*J. Bio. Chem.* 73:153, May 1927) have devised a purified experimental ration for rats which is physiologically equivalent to a natural diet. The basal ration consists of dextrin, casein, salts, and agar-agar. To supplement this diet, vitamin containing substances are given separately. On this diet reproduction and growth have been normal, but lactation requires 3-5 times more vitamin B. In another experiment (Ibid. p. 175) human milk was added to the diet in varying amounts for vitamin A. Five cubic centimeters of milk a day were adequate for normal growth reproduction and lactation, but when less than this amount was given pregnant and nursing females, the young when put on a vitamin A free diet developed ophthalmia

in about a third the time necessary for normal young rats. In a third investigation (Ibid. p. 189) in which human milk was added in varying amounts as a source of vitamin B large quantities of 25-35 cc. were insufficient for a mother to adequately nourish her young. EVANS and BURR (*J. Bio. Chem.* 76: 273, Jan. '28) have made a more direct assay of the vitamin B requirement for lactation in rats. With complete and purified diets fed these animals, 0.6 gms. of yeast, as the only source of vitamin B, was sufficient for growth and ovulation. Females on this ration, however, became sterile early in life, but by the addition of a few drops of wheat germ oil, gestation and litters of living young were produced. Toward the end of lactation five times the usual amount of yeast is required. These authors (IBID. 76: 273, Jan., '28) have also found the nursing young of mothers deprived of vitamin E to develop partial paralysis and often die, and those surviving a few days cannot be cured. SURE and SCHILLING (*Am. J. Dis. Child.* 35: 753, May '28) have found that young nursing rats suffering from vitamin D deficiency die of periosteal and visceral haemorrhages. Polyneuritic nursing young die with stomachs well distended with curds. This diet in non-lactating animals is entirely adequate. And ROSE and McCOLLUM (*J. Bio. Chem.* 78: 535, July, '28) have observed the growth, reproduction, and lactation of rats fed on different proportions of cereals, vegetables, with an adequate diet. On a diet low in cereals lactation was poor in the 3rd and 4th generations. But by the addition of eggs to one of the diets, the females matured earlier, bore a larger number of young, and lactation was improved.

An analysis of anoxia in children has been made by BARTLETT (*Am. J. Dis. Child.* 35: 26, Jan., 1928). He finds functional and organic types in 24% of all children brought to a hospital clinic. Among the commonest organic conditions are septic tonsils and adenoids, acute infectious diseases, tuberculosis, pyelitis, and dental caries. The most effective means of curing functional anoxia is by the introduction of liver, kidneys, and beefsteak into the child's diet. Animals in a natural environment seem to exhibit a precise selection of proper food, but under domestication lose to some extent this reliable instinct. In an attempt to determine the selective instinct in infants DAVIS (*Am. J. Dis. Child.* 36: 651, Oct. 1928) set before some of them many different kinds of food for a period of six months and allowed them to choose what they should eat. The selection made by each child differed a little, the average percentage being about as follows: milk 40%, cereals 11%, fruits 30%, eggs 5%, musele meats 3%, vegetables 4%, bone marrow 3%, glandular organs 3%, and fish 1%. All infants showed themselves to be omnivorous but rarely ate more than three solid foods at one meal. By this method an optional state of nutrition was produced, because in weight, bone development, musculature, general vigor, and health the results were equal to the best prescribed diets. MORGAN and WARREN (*Am. J. Dis. Child.* 36: 972, Nov., '28), observed the effect of different supplementary meals on the weight and stature of school children from four families. One group were fed milk and crackers, another orange juice and crackers, and a control group were without the lunch. Those fed milk gained the most weight, but the orange group became taller. The girls gained more in weight and height than the boys.

An article by WOODS (*J. Mo. M. A.* 25: 1, Jan., 1928) describes the acid base balance in children in intestinal disorders. In the treatment of acidosis the author advises first water administration, glucose, alkalis, in dehydration, possibly blood transfusion, and later thick cereal pastes and citric acid milk are fed. GERSTLEY et al (*Am. J. Dis. Child.* 35: 580, Apr. 1928 and 36: 289, Aug. 1928) have made a study of the influence of feeding on the formation of acids in the feces of infants. In the first work they compare human and modified cow's milk, and then the result of adding large amounts of carbohydrate. The effect of human milk produced remarkably constant fatty acids, but cow's milk was sometimes low, at other times high. Lactose added to human milk causes little change, but to cow's milk an increase of free acid. After a parental infection the excretion of acid was high for several weeks. All of these changes did not affect the child's nutrition.

Protein metabolism of undernourished children has been investigated by WANG et al (*Am. J. Dis. Child.* 35: 968, June, '28), and the same absorption found in normal and underweight children. It is therefore evident that the protein requirement should be estimated according to the standard rather than the actual weight of the child. In another study (*Am. J. Dis. Child.* 36: 1161, Dec., '28) these investigators learned that the nitrogen balance of these children on high and low protein diets is directly proportional to the nitrogen intake. The nitrogen is better utilized in underweight than in normal children, and a striking increase in normal and a marked increase in underweight children is produced by added protein. The authors recommend 4gm. of protein per kilogram of body weight for malnourished children, and also the addition of a quart of milk in order to supply protein, calcium, and vitamins. WILSON et al (*Am. J. Dis. Child.* 36: 470, Sept., 1928) have made a study of the carbohydrate metabolism through the respiratory exchange of normal and marasmic infants. Following the ingestion of large dextrose meals the carbohydrate burned in normal children was about 0.5 gm. an hour per kilogram. The same amount was burned in the marasmic, but as they weigh less than malnourished children they burn an

increased amount of carbohydrate. The demonstration of normal carbohydrate metabolism in marasmic infants indicates that insulin is not necessary. Observations have been made by MONCRIFF and PAYNE (*Arch. Dis. Child.* 3: 257, Oct. '28) on the fat of infants with coeliac disease. The feces in this disease contain large amounts of fat, which is due to indigestion. The authors point out that the fat being dejected may be due to a mechanical occlusion of the lacteals from enlarged glands; but is probably due to an excretion of fat into the intestine because the circulating fat cannot be utilized by the cells. In the latter, the blood fat was high. The mineral metabolism in coeliac disease has been carefully worked out by TELFER (*Glasgow Med. Jour.* Apr., '28). The utilization of fat was very defective as a half of the fat ingested was excreted in the feces. The mineral elements too are eliminated in large amounts by the bowel, but on account of being diluted with fat only 5.75% of calcium, 0.64% magnesium, and 5.18% phosphoric acid. Half of the calcium forms insoluble soaps. A failure of calcium assimilation was also found in delayed ossification of the carpal bones.

The growth of rats on vegetable substances has been observed by WU and WU (*Chinese J. Physiol.* 2: 173, Apr., 1928). The food generally consisted of a cereal, legume, leafy vegetable, sesame oil, and salt. On this diet they found that the rate of growth of young animals was about half that of food containing animal protein. From a study of 2000 children with scarlet fever SCHLIEPS (*Jahrb. f. Kinderh.* 120: 127 June, '28) points out that malnutrition is largely responsible; as those with an exudative diathesis that are improperly nourished generally contract the disease severally and have complications. And children with the diathesis that are rationally fed and those without the diathesis but improperly nourished, have the disease lightly and without complications. Whereas properly nourished children without the diathesis never contract scarlet fever.

THE VITAMINS, OPHTHALMIA, BERI-BERI, AND SCURVY

The small book on Nutrition and Health, (1928) by McCULLUM and SIMMONDS gives some interesting and valuable information about the vitamins. At present these food factors are generally alluded to as vitamin A—ophthalmia, B—beri-beri, C—scurvy, D—rickets, E—reproduction, and F—pellagra. Formerly factor F was called PP.

"Vitamin A Deficiency in Newfoundland" is the title of a paper by AYKROYD (*Irish J. Med. Sci.* April, 1928). The deficiency often produces night blindness from a limited diet of biscuits, white bread, salt meat, margarine, potatoes, cabbages, and turnips. Fresh fish, eggs, poultry, and game are eaten now and then. As soon as functional hemeralapia develops, these people begin to eat bird and rabbit's livers, and occasionally take cod liver oil. The disorder is frequently relieved in a few days. Although vitamin A deficiency ordinarily produces ophthalmia, in a study of the cellular pathology of the absence of this factor in the food of guinea pigs WOLBACH and HOWE (*Arch. Path. and Lab. Med.* 5: 239, Feb., 1928) find that the specific effect results in the substitution of stratified keratinizing epithelium for normal epithelium in respiratory, alimentary, and genito-urinary tracts, and parocular glands. The exuberant growth of this epithelium is so marked that "pearl bodies" are sometimes formed and the mass resembles a neoplasm. An irregular growth of the basal cells or metastases does not occur. Another effect of vitamin A deficiency has been the formation of calcium phosphate calculi in the urinary tract of rats. This was first noted by OSBORNE and MENDEL but has been recently confirmed by VAN LEERSUM (*J. Bio. Chem.* 76: 137, Jan., 1928). The action of vitamin A as an anti infective agent has been pointed out by GREEN and MELLANBY (*British M. J.* 2: 691, Oct. 20, '28). In a large group of animals malnourished on account of vitamin A deficiency practically all die from inflammatory lesions. A control group fed a complete diet remained healthy. The presence of vitamin D did not affect the infectious process.

The symptomatology of vitamin B deficiency in infants is discussed by HOOBLER (*J. A. M. A.* 91: 307, Aug. 4, 1928). The author, having examined and treated many infants with beriberi in Manila, is convinced that many American infants have a similar though less pronounced indication of vitamin B deficiency. This begins with a mild gastro-intestinal disorder, and later brings about vomiting, constipation, anorexia, and loss of weight. These and other symptoms disappeared by the addition of yeast concentrate to the milk. SCOTT and HERMANN (*J. A. M. A.* 90: 2083 June 30, '28) have observed beri-beri in Louisiana. The investigators had an opportunity to study some patients from a prison in which there had been an outbreak. "Maladie des jambres" is a leg weakness which had been reported from the rice growing parishes of the state for some time. The disease, like kakke of Japan, is evidently beri-beri and is caused by a diet without vitamin B. The symptoms presented refer to nerve degeneration, usually pain and weakness of the legs; cardiac manifestations, in which gastro-intestinal disorders and oedema of the legs, palpitation, and dyspnoea are generally evident. Polished rice was generally consumed, but unsanitary conditions act indirectly as a factor in causing the disease. Secondary myocardial dysfunction and kidney disease are sometimes complications. A pre beri-beri condition among Japanese has been described by GREY (*J. Hyg.* 27: 257 Mar., '28). This is a disorder

that evidently arises from a diet low in protein, high in starch, and with insufficient vitamin B. In this state beri-beri may appear from excessive fatigue, heat, or intoxication. SNELL and HABEIN (*Am. Int. Med.* 1: 694, March, '28) report a patient with tetany from chronic diarrhoea. The patient, a married woman of 31, had frequent attacks of diarrhoea from infancy. At maturity she suffered from flatulence, especially after the ingestion of fat food, and a subsequent attack of diarrhoea produced tetany. The blood calcium was reduced to 6.5 mgs. On a high vitamin and calcium diet, with calcium lactate and parathormone, there was improvement at times. The nature of the heart injury in beri-beri has been reported by WENCHENBACH (*Verslag. Akad. Wettenshappen, Amsterdam* 37: 137 '28). The organ is generally increased in volume and weight, but this is due to oedema rather than hypertrophy. The suggestion is made that the injury to the nerve tissue is of the same oedematous nature. MEBIUS (*Nederl. Tijdschr. & Geneesk.* 72: 3985, Aug. 18, '28) also found in this condition oedema of the right heart muscle. The excess of fluid in the cells apparently weakens the contractions and paralysis of the heart becomes imminent.

A study of vitamin B deficiency in pigeons has been made by KON and DRUMMOND (*Biochem. J.* 21: 632, 1927). By an ingenious method of feeding, the voluntary intake of birds consuming food without vitamin B was measured, and a similar amount with adequate vitamin B was given a control group. To a third group a liberal amount of food without vitamin B was forcibly fed and the same amount of complete food was similarly given to a fourth group. The results observed were that the decrease in body weight in groups 1 & 2 is due to partial starvation, as the utilization of the food was the same. Increase of blood sugar was the result of inanition. Active amylopsin was obtained from convulsive animals. A relation could not be found between the occurrence of nervous symptoms and degenerative changes in the nerves. A satisfactory explanation of the true nature of vitamin B deficiency cannot be given.

Rats on a diet without vitamin B have been observed to grow and keep healthy through refection by FREDERICIA et al (*J. Hyg.* 27: 71, Nov. 27, 1927). Refection is a term, meaning to restore a change; and this is brought about by the consumption or adding of the feces to the diet. These animals deject feces which are white and largely composed of starch. These excretions have been found to contain a considerable amount of vitamin B. Beri-beri Columbarum by McCARRISON, SUNDARARAJAN and GLOSTER (Thacker, Spink & Co., Calcutta, 1928) forms a comprehensive treatise. Most of the study is composed of nutritional data, but there is a statistical examination of the experimental data relating to the heart, and also the spore-forming bacilli in rice. Beri-beri columbarum with the exception of hypertrophy of the heart has all the pathological features of human beri-beri; and is due to an insufficiency, though not a complete want, of vitamin B. From experiments on animals beri-beri like disorders may be of infectious origin, but the true disease is due to malnutrition alone. The general effect of the diet caused an atrophy of the heart. Aerobic spore forming bacilli are widely distributed, occurring in soil, water, cereals, flour, and bread, and sometimes cause decomposition of foods; but their presence in foods is not the cause of beri-beri. VERDER (*J. Inf. Dis.* 42: 589, June, '28) tested the resistance of rats in a state of vitamin B deficiency with B. enteritidis and found the organisms to multiply at a high level in the gut; but in a state of A, D, and E, deficiency organisms were recovered from the spleen.

In an article on scurvy, SHATTUCK (*J. A. M. A.* 90: 1861, June 8, '28) points out that this disease may be overlooked among patients in the hospital clinics. In the group of 17 adults, the food consumed was very limited because the patients lived alone and prepared their own meals. The diagnostic signs are extensive and painful ecchymosis of the legs, swelling of the gums, and the absence of changes in the blood characteristic of purpura hemorrhagica. These patients are readily cured by the consumption of complete food. OHNELL (*Acta Med. Scandinav.* 68: 176, Mar. 15, '28) reports 22 patients with scurvy from dietetic measures instituted in the treatment of intestinal diseases. Milk, fruit, and vegetables were generally lacking in the diets. Gengivitis, cutaneous haemorrhages, were generally observed; haematuria and haemoptasis were uncommon.

RICKETS, DENTAL DECAY, AND OSTEOMALACIA

A comprehensive survey on rickets and allied diseases by PARSONS (*Lancet* II, 433 & 485, Sept. 1 & 8, 1928) was delivered in the Ingleby Lectures. In the conclusions of this discourse he states "that rickets is a disorder of calcium and phosphorus metabolism usually the result of defective absorption of these elements from the bowel; further, that this defective absorption is due either to an insufficient supply of these elements or some activating body in the tissue fluids; that this body is probably vitamin D, which in its turn is derived from the alimentary canal or synthesized by the action of ultra-violet rays on sterols in the skin; but that occasionally the faulty metabolism may be entirely endogenous in origin, as occurs in renal rickets; and finally, that growth is an essential for the development of rickets." The hydrogen-ion concentration of the alimentary tract of normal and rachitic dogs has been observed by GRAYZEL (*J. Bio. Chem.* 76: 423, Feb., '28). On mixed, protein, fat, or carbohydrate the reaction

varies between pH 5.7—6.6, but on a rachitic diet the reaction becomes higher, varying between pH 6.4—7.4.

AGDUHR (*Acta Pediatrica* 7: 289, '28) maintains that large doses of cod liver oil not only have a toxic action on some mammals' heart muscle but also that the livers of rabbits showed signs of fatty degeneration. A careful and comprehensive study of avian rickets has been made by NONIDEZ (*Am. J. Path.* 4: 463, Sept., '28). In this work chickens were given a complete food for five weeks, and then the butter milk (vitamin A) was gradually and entirely left out of the diet. The birds were kept indoors, killed in 4—5 weeks, and examined grossly and microscopically. The lesions found were similar to mammalian rickets. There was beading and abnormal bowing of the ribs, deformities of the sternum, and enlargement of the epiphyses. Microscopically, an excess of osteoid material was found in the spongiosa, active production of periosteal osteoid, a thickened osteoblastic layer along the rachitic band, many osteoclasts and no calcification in the provisional zone. Other abnormalities were also apparent. The osteoid fibers were deposited without previous erosions of the cartilage, giant cells formed through the fusion of hypertrophied osteoblasts, the reticulum and blood vessel walls were thickened in the rachitic band, and the lymphatics were distended.

In an attempt to determine some of the factors in the decay of children's teeth, KAPPES (*Am. J. Dis. Child.* 36: 268 Aug., '28) selected one group with nearly perfect teeth and another twenty-five children with marked dental caries, and made inquiries about the health, diets, mode of living, and the condition of the teeth of mothers and fathers; then carried the questioning further and found out about the health, feeding, exercise, and rest of the two groups. The only significant difference found was in the diets. The children with good teeth generally consumed a well proportioned diet of meat, eggs, vegetables, and fruit, and ate sparingly of candy. From adjustment of the diet of diabetic children with poor teeth BOYD and DRAIN (*J. A. M. A.* 90: 1867, June 9, '28) found by increasing the vitamins and mineral salts that dental caries was arrested. On the other hand, MELLANBY and PATTISON by the addition of ergosteral to the food of children with carious teeth found that the spread of decay stopped and the infective process was arrested. This work corroborates a previous investigation in which the vitamin D in the form of cod liver oil, egg yolk, and extra milk inhibited dental carries in children. MARSHALL (*J. Am. Dental Asso.* 14: 3 '27) has observed dental decay and pulp calcification in adult rats, which are not arrested by a complete diet. MASAKI (*J. Am. Dental Asso.* 12: 1654 '27) also studied the teeth and adjacent structures of rats in vitamin A deficiency, and found changes in the enamel prisms, maxillary bones, and marrow which resembled osteomalacia.

A plea for the prevention of osteomalacia in India has been issued by GREEN-ARMYTAGE (*Indian Med. Gaz.* 63: 1, July '28). He cites three requirements for this purpose; a sufficient supply of suitable proteins, carbohydrates, and salts; enough vitamins; and an activator for calcium metabolism, sunlight and exercise. Unfortunately many of the races of India are closely confined to unhygienic dwellings by unalterable customs and fixed habits of many years, and consume a rather monotonous diet, without fish or eggs and rarely green vegetables and fruits. Milk is taken sparingly and is of poor quality on account of the feed given the cattle. The treatment consists of sunlight, complete food, calcium lactate, cod liver oil, irradiated cholesterol, or a few other medicines. CONSTAM and PATCH (*Minnesota Med.* 12: 40, Jan., 1929) give a comprehensive report on a case of pellagra, osteomalacia, and tetany. The patient, a man of thirty-four, had had diarrhoea every summer since childhood from consuming fresh vegetables and fruit. And TOWER (*Mich. State M. Soc. J.* 27: 164, Mar. '28) reports an extreme case of osteomalacia. The patient was a Hindu woman of 35, who seven years previously first noticed a bending of her bones. The disorder progressed over the intervening years so that she could not walk, and the sacrum had such an antero posterior curvature that she could not lie on her back without great discomfort. One humerus was bent to an angle of 135 and the other was worse. The deficiency was also shown by a reduction in weight to 22.7 kg (50 lbs), a severe anemia, and pyorrhea. In this condition she became pregnant and at term through a caesarian section a live baby was delivered. Convalescence was protracted. SCHILOWZEW (*Deutsch. Zeitschr. f. Chir.* 209: 320, June, '28) observed the effect of C avitaminosis on fractures and found callus formation retarded, and when formed a spontaneous refracture sometimes occurred.

PELLAGRA

During the year very valuable investigations have been made on pellagra. Unfortunately, the one who did the most to discover the true nature of this disease through years of patient and painstaking researches, has fought the great fight. The death of JOSEPH GOLDERGER is an irreparable loss . Even at a time when he was suffering from a malignant disease he made many contributions to the knowledge of pellagra. One of these by GOLDBERGER and his associates is on endemic pellagra in some villages of South Carolina. (*Pub. Health Rep.* 43: 2645, Oct. 12, '28). Of the villages observed with a combined population of 22,633 persons, 1,147 cases of pellagra developed in a year. The mortality of these patients was less than 3%. The endemic disease is preponderatingly a disease of

children from 2-15 years. Single women are usually exempt. Pellagra is a seasonable disease because 80-90% of all cases have onset in July and August. Unsanitary conditions did not influence the incidence of the disease. There was, however, a very direct relation to economic fluctuations, because during hard times certain classes could not procure an adequate diet. CRUTCHFIELD (*Arch. Derm. & Syph.* 17:650, May, '28) writes on the skin and mucous membrane of pellagra. From a group of 109 patients, the author points out that a large percentage of pellagrins reveal a contributing cause, as colitis, gastro-enteritis, worry, melancholia, alcoholism, or carcinoma, that has previously caused malnutrition. The chief point brought out is that the mucous membrane of the mouth shows lesions which are more typical than the skin manifestations.

The relation between pellagra and alcoholism has been described by KLAUDER and WINKELMAN (*J. A. M. A.* 90:364, Feb. 4, '28) in 100 patients. In these patients "diarrhoea was usually severe, continuing unabated for weeks, and was very recalcitrant to treatment. . . . It appears that chronic alcoholic patients are potential pellagrins, and are more susceptible to pellagra following an insufficient diet than those who are not addicted to alcohol." Observations on the pathology of the nervous system are interesting. Ganglion cell changes like the retrograde degeneration of Nissl were found. In this type of degeneration, the cell loses its angular outline and becomes swollen. The Nissl bodies have generally disappeared, the nucleus is often eccentric and occasionally partially extruded from the cell body. Pellagra and alcoholism have also been observed by SWEITZER (*Minnesota Med.* 11:719 Nov., '28) in a small number of patients. The author states that alcohol probably acted to disturb metabolism.

The psychoses of pellagrins have been described by POUND (*J. Florida Med. Asso.* 15:299, Dec., '28). In this article the author points out that this disease has increased in the last few years from the admissions to the Florida asylums. These psychoses may resemble any mental disease, but the distinctive feature is the depressive character. Mental involvement is generally a late manifestation. Digestive disorders and diarrhoea are among the first. Some of the patients had hookworm. When the case is not too advanced and the patient will consume the proper food, the psychosis will often disappear in two months. Treatment consists of supplying a well balanced diet of sufficient amount, and dilute hydrochloric acid. COOPER (*Am. J. Psych.* 7:945, May, '28) has contributed a similar article from a study of patients in the Louisiana State Hospital. In a paper by FISHER (*Ohio State Med. J.* 24:615, Aug., '28) the frequency of pellagra in the north has been pointed out. And CARLEY (*J. A. M. A.* 91:879 Sept. 22, '28) has written of pellagra occurring from a voluntary reduction of diet.

A study of pellagra from the experimental standpoint forms an outstanding feature of work on the disease during the year. More than ten years ago CHITTENDEN and UNDERHILL (*Am. J. Physiol.* 46:13, Aug. 1917) called attention to the production of a condition resembling human pellagra in dogs. In a recent article UNDERHILL and MENDEL (*Am. J. Physiol.* 83:589, Jan. '28) have continued their studies and report on a deficiency disorder of dogs related to black tongue. In this study the authors find butter fat which is fresh and well colored, egg yolk, carrots—especially crystalized carotinoids, are very potent foods in restoring these animals to health. Cod liver oil restores but it is not so potent, and lard extracts the potent agent from carrots. In conclusions the statement is made that "naturally occurring pigmentary substances in foodstuffs play a rôle in the nutritive processes. GOLDBERGER et al (*U. S. Pub. Health Rep.* 43:657, Mar. 23 '28) have produced black tongue in dogs by feeding them on several basic diets which are generally composed of corn meal, casein, cod liver oil, and a salt mixture. "Black tongue in dogs can be cured by the addition of yeast to these diets." The curative action of yeast is destroyed by charring, but not by heating to a pressure of 15 lbs. for 7½ hours, and is absorbed from an acidulated aqueous extract by English Fuller's earth. In another study by GOLDBERGER and his associates (*Idem.* 43:1385, June 8, '28) numerous foodstuffs have been tested for the black tongue preventive. Beef muscle, pig liver, salmon, egg yolk, and wheat germ proved potent sources of this food factor; but maize, wheat, cow peas, soy beans, milk, butter, cod liver oil, cotton seed oil, carrots, and rutabagas have little or none of this dietary essential. The foods containing substantial amounts of the black tongue preventive resemble those curing pellagra in man.

By good fortune the services of DENTON (*Am. J. Path.* 4:341, July, '28) were secured to make a comparative study of the pathology of pellagra and the lesions of black tongue from GOLDBERGER'S animals. The earliest abnormal sign seen is a rarifaction of the stroma beneath the epithelium in the mouth. Here the vessels increase in size, the intracellular spaces enlarge, and there is a loss of intracellular material—especially fibrillae. Later the epithelium becomes thin, ulcerated, and covered with a fibrino-purulent membrane. Less marked lesions occur in the stomach and intestines. The epithelium of the scrotum also showed a marked atrophy. The lesions of skin, mouth, oesophagus, and colon, in black tongue and human pellagra are very similar; and "appear to have their origin in a failure on the part of the organism to maintain the specialized supporting tissues of

the epithelium in various situations." From a study of rats on diet without Vitamin B_2 (F) pellagra like lesions have been produced by FINDLAY (*J. Path. & Bact.* 31:353, Apr., '28). One group of animals were fed a diet without vitamin B_1 and B_2, another without B_1, a third without B_2 and a fourth diet was complete. Rats fed a diet without vitamin B_2 did not show nerve symptoms but in 8-10 weeks an atrophy and ulceration of the skin and mouth, somewhat similar to human pellagra developed. And in the stomach a papillomatous proliferation of the epithelium was often found. "The experiments here recorded confirm those of Goldberger and his colleagues of the presence of two vitamins in yeast."

GOITER

An interesting comparison is given by OLSEN (*U. S. Pub. Health Rep.* 43:113, Jan. 20, '28) of the boys and girls with endemic thyroid enlargement in Cincinnati from surveys made in 1924 and 1927. In the recent investigation a lessened incidence of the disease, a great reduction in the goiters of moderate and large size, and a diminished age incidence were found. The cause of the reduction is ascribed to more general use of iodized table salt and the efficient treatment instituted by physicians.

A comprehensive report on iodine deficiency in animals has been made by EDWARDS (*Endocrin.* 12:539, Sept.-Oct., '28). General observations were made of pigs, sheep, goats, cows, and horses, in the different districts of the United States; and special feeding experiments were carried out with pigs and lambs. The pigs fed potassium iodide made a 10% daily gain on 10% less feed than a control group without the salt. The administration of the iodide to pregnant ewes prevented goiter in the lambs, and there was a slight increase in the quality and quantity of the fleece. Experiments have been carried on by VAN DYKE (*Arch. Int. Med.* 41:615, May, '28) to determine the selective absorption of iodine compounds by the hyperplastic thyroid gland of dogs. The results found were that thyroxine iodine is very slowly, but free iodine very quickly, absorbed. Iodate iodine is also bound quickly to the gland but not as rapidly as iodide iodine. In conclusion the author points out that in practice iodide-iodine is the best salt to alter the secretion of the thyroid instead of the commonly used free iodine of Lugol's solution. McCARRISON (*Indian J. Med. Research* 15:909, Apr., '28) has continued with a study of "lymph-adenoid" goiter of rats. This type of goiter is produced by a diet deficient in vitamins A, B, C, and D, but containing a salt mixture of 0.45% potassium iodide. This is a type of thyroid hypertrophy which may occur in children on a diet poor in vitamins, protein, fat, and starchy food, and without manganese.

PROTEIN FOOD, NEPHRITIS, AND BLOOD REGENERATION

The relation of protein food to malnutrition is becoming more clearly defined. The value of protein in human nutrition has been advocated by DUBOIS (*J. Am. Dietet. A.* 4:53 Sept. '28), largely because many physicians recommend a free or low protein diet, which may produce partial protein starvation in chronic diseases. A comprehensive study of the metabolism of the meat subsisting Eskimos has been made by HEINBECKER (*J. Bio. Chem.* 80:461, Dec. '28). When meat is plentiful they eat from 4 to 8 pounds a day. Most of it is partly boiled, while the remainder is eaten raw. The fat content is 6-10%. In tests made on some of these people they were found to have a high tolerance for carbohydrate, the non-protein-nitrogen of the blood is normal, fats are oxidized completely, the basal metabolism is higher, and the respiratory quotient falls to a level that indicates that fat is being converted into carbohydrate. RICHET (*Comp. rend. Soc. biol.* 98:109 '28) observed the result of feeding 13 adults and 12 children on an adequate diet but low in protein, and found the majority to lose weight. The loss is attributed to the consumption of body proteins.

The production of nephritis in white rats has been brought about by NEWBURGH and CURTIS (*Arch. Int. Med.* 42:801, Dec., 1928) by feeding the animals on a high protein diet. Food containing 75% of dried liver caused nephritis in these animals in less than twelve months, but the same proportion of casein fed sixteen months gave rise to only a moderate injury of the kidney. The effect of beef muscle is intermediate. COWELL (*Brit. J. Exper. Path.* 9:164, Aug., '28) produced an uranium nitrate nephritis in a few rabbits and then studied the effect of a few foods. He found that a diet composed entirely of cabbage protected the animals from the toxic effects of the nitrate. JACKSON and MOORE (*J. Clin. Investigation* 5:415, Apr., '28) removed one kidney from some rats and by feeding them on a high protein diet damaged the remaining kidney.

The effect of a liver diet on the blood of normal persons has been made by CORNELL (*Canad. M. A. J.* 18:394, Apr., '28). The amount of liver consumed was small, and the observations carried on for only a month. At the end of this time the volume index, the percentage of haemoglobin, the corpuscle, leucocyte, and differential counts, and the size of the corpuscles remained constant. In a postmortem examination by HARRIS (*Quart. J. M.* 84:499, July '28) of a patient having had scurvy-rickets a gelatinous marrow was found. This condition explains the failure of normal erythropoiesis and severe anemia. WHIPPLE (*Am. J. Med. Sci.* 175:721, June '28) has made a useful and valuable summary of his investigations of haemoglo-

bin construction from dietary factors, which have been described in previous reports of nutrition. Of especial interest is the observation that the anemic dog conserves carefully large amounts of injected haemoglobin and fabricates this material into new haemoglobin up to 90%; and it is very probable that the muscle haemoglobin given intravenously will form blood haemoglobin in an emergency. There does not appear, however, to be a direct exchange between muscle and blood haemoglobin in the body, but the haemoglobin is broken down into intermediate substances before reconstruction is effected. In discussing anemic problems the assertion is made that the condition is due to the lack of something, and not blood destruction from a toxin. This may be due in cancer cachexia to the absorption of haemoglobin building material by a rapidly growing tumor, in an intestinal stricture from a lack of materials absorbed from the intestine etc. And the "observations of Minot . . . may be interpreted as evidence in favor of a lack of stroma producing substance, so that pernicious anemia may prove to be a deficiency disease." This point of view of a failure of nutrient substances to build up the marrow to keep blood regeneration normal suggests the existence of the state of health from anabolic nutrition. In a study of a diet containing 86% fat on growth, blood formation and destruction of rats, MULLER (*J. Clin. Inves.* 5:521, June, '28) finds relatively little effect, the exception being that the adult animals had a dry, thin fur, and one a scaly skin eruption. There was also an increase of abdominal, liver, and bone marrow fat. MITCHELL and SMITH (*J. Bio. Chem.* 70:471, Oct., '26) have tested various foods and iron compounds for blood regeneration in anemic rats. The animals were given various diets which contained 0.4 mgs. of iron. Of the foods, molasses, meat, and ovoferrin were found to be very good; egg yolk and spinach were good. Ferric chloride and ferric ammonium citrate were also very good, but ferric oxide and ferrous carbonate were poor. WADDELL et al (*Science* 67:139, '28) produced iron starvation in rats on a milk diet, could not correct the anemia with ferric chloride, but the hydrochloric extract of liver ash readily relieved the deficiency.

EPILEPSY, SKIN DISEASES, AND TUMORS

Several papers have appeared recently on the ketogenetic diet in the treatment of epilepsy. One by BARBORKA (*J. A. M. A.* 91:73, July 14, '28) records the results in 32 adult patients. Of this number a state of health was brought about in seven in which the attacks were controlled, and twelve were benefitted. Thirteen patients were not improved. LENOX (*N. E. J. Med.* 199:74, July 12, '28) describes the general effect of the diet in children and special mention of two children benefitted by the fat food. FETTERMAN (*Ohio State Med. J.* 24:287, Apr. 1, '28) finds treatment by the ketogenetic diet disappointing. Sixteen young and old patients were put on the diet from one to eight months. Five of the patients were made worse, four were unaffected, and five improved. LENOX and COBB (*Arch. Neru. & Psych.* 20:771, Oct., '28) made a study of fasting in epilepsy. Twenty-seven children and adults were observed. The results obtained are stated in these words "we believe that fasting has no place in the routine care of those afflicted with recurrent convulsions except as a means of inaugurating a high fat diet." GRANT et al (*Am. Rev. Tuber.* 16:642, Nov. '27) fed rats on a diet deficient in vitamin D and calcium and found their resistance markedly lowered to tubercle bacilli.

In a comprehensive article by COMBES (*Med. J. & Rec.* 127:659, June 20, '28) the skin manifestations of systemic disease have been described. Metabolic disturbances are given especial attention; various skin lesions are found in diabetic patients and others may occur in disorders of the nitrogenous and purin balances. In conclusion the author states that "most cutaneous diseases are *not* clinical entities; but merely skin symptoms of some constitutional or organic disturbance of an obscure nature." A similar theory is advanced by McCULLOCH (*W. African Med. Jour.* 2: July, '28) as a cause of tropical ulcer in native Africans. From a study of those afflicted he finds the diet generally unbalanced with an excess of carbohydrate and a deficiency of protein and salts.

In a statistical study of "Diet and Cancer" COPEMAN and GREENWOOD (His Majesty's Stationery Office 1926) have investigated the diets and deaths from cancer of many religious orders. Life in some of these orders is extremely rigid, and the consumption of meat is not allowed and fish and eggs are not partaken of by all the monks and nuns. "This analysis conclusively proves that fatal cancer occurs in populations abstaining from flesh food, and lends no real support to the contention that among such populations the relative incidence of cancer is low." The effect of vitamin unbalance on the origin of malignant tumor has been observed by ERDMANN and HAAGEN (*Zeit. f. Krebsforsch.* 26:333, Mar. 6, '28). Of 40 rats fed a diet without vitamin A or C four tumors developed, but they did not metatasize and attempts to transplant the tumor to many other rats failed. FUJIMAKE et al (*Sei-i-Kwai Med. J.* 47:1, '28) observed atypical proliferation of the stomach epithelium in rats fed a diet without vitamin A and fat. By the addition of heated olive oil a papillomatous proliferation of the epithelium was produced.

OBESITY, HABITS OF EATING, AND HEALTH EDUCATION

The excessive accumulation of fat is being recognized more and more as a metabolic dis-

turbance; and from an understanding of the health of anabolic nutrition obesity is just as much a deficiency disorder as underweight. The highly perfected nutritive apparatus evidently does not supply normal nutrient substances to the tissues when it makes a useless deposition of fat. GOLDBLATT et al (*Quart. J. Med.* 21:325 Jan., '28) in a study of carbohydrate metabolism in obesity, puts the patients into exogenous and endogenous groups. Early in the endogenous type there is a marked tolerance to carbohydrate as shown by the blood sugar curves; but later an intolerance is manifest, which resembles diabetes. NEWBURGH (*Atlantic M. J.* 31:707, July, '28) writes on the nature of obesity, and calls it a disease of the appetite. The patient eats too much. Those with myxoedema are fat because they have a reduced metabolic rate and need less calories. Those with hypo- or hyperpituitarism produce fat from another effect; but they have an abnormal appetite and eat too much. A comprehensive article on food allergy has been written by ROWE (*J. A. M. A.* 91:1623, Nov. 24, '28), in which he believes that it causes abdominal pain and gastro-intestinal symptoms, urticaria, angio neurotic oedema, eczema, migraine, and bronchial asthma frequently in children and adults. The offending foods are determined through skin tests and trial diets. The four elimination diets, though complete and balanced, are generally composed of different articles of food.

In days gone by, the American Indian in his natural environment was a superb example of physical fitness. A decided contrast is noted by STENE and ROBERTS (*J. Am. Diet. Asso.* 3:215, Mar., '28) in a study of the inhabitants of a reservation. From the little known, the primitive savage ate largely of meat, wild turnips, corn, and wild berries. On the other hand the Sioux Indians of today in South Dakota live in one and two room shacks and eat irregularly and between meals. Fried bread and cereals are largely consumed, and the cereal is often mixed with condensed milk. With the exception of potatoes and beans, vegetables are not often consumed and fruit rarely eaten. Butter, eggs, and milk are also uncommon articles of diet. Meat is greedily eaten, and while 25—40 pounds are distributed to each Indian a month, most of it is gone in a few weeks. From a general survey of their physical condition, many are found to be too fat or too thin; decayed teeth are prevalent, many have bow legs, and sore eyes are often seen. The infant mortality is 50%. More than one-half the deaths of adults are due to tuberculosis, and one-third from pneumonia and influenza. From a general survey it is found that the food lacks calcium, and also vitamins A and C. In a study of the dietaries in Peking WU and WU, (*Chin. J. Physiol.* 1:135, July, '28) find the fuel value adequate but low in proteins, vitamins A and D, and calcium and phosphorous. MORZKOWSKA and McLAUGHLIN (*J. Am. Diet. Asso.* 4:142, Dec. '28) give an account of Polish food habits from an examination of the diet of a peasant's and a squire's families, a school, and two orphanages. The food of the peasants was somewhat monotonous as it consisted of only eight articles during a period of two weeks, but as it contained 111 gms. of protein, 75 of fat, and 439 of carbohydrate, it was considered adequate. Calcium, phosphorous, and iron were sufficiently high. The food in the squire's household was more varied and consisted of twenty-five different foods. On the other hand the food of the school and orphanage was low in protein, calcium, and phosphorous. In America Polish immigrants consume more meat and sweets, and refined cereals have replaced whole cereals. A study of a week's food consumption of 300 persons in Australia was made by DUPAIN (*J. Proc. Sydney Tech. Coll. Chem. Soc.* 3:37, '27). The amount of food eaten varied between 2,800 and 3,600 calories. The proportion of carbohydrate was often five times as great as the protein or fat. With an increase in protein there was a decrease in the food consumed.

The capacity of the human body to maintain its integrity has been given by CANNON (*N. E. J. Med.* 199:593, Sept. 27, '28). In this address, the author points out that there are three types of devices employed in our bodies to assure our well being. First, there is a group of automatic self stabilizing mechanisms which maintain the constancy of internal conditions. Second, there is a group of reactions to external attack, which operates to preserve the integrity of the organism. And finally, there is evidence that the body as a machine is constructed with a generous margin for water, tear, and damage. The "fundamentals of health" by NEWMAN (*J. A. M. A.* 90:1722, May 26, '28) has been reported. He writes "merely to devise ideal dietaries is not enough. There must be healthy activity of the physiological processes which had to do with mastication and preparation, with absorption and assimilation." The people generally consumed ham and beef, beer and bread, tea and pickles, canned meats and proprietary foods, had an unstable digestive system and impaired physique." "This was partly due to medical neglect of rational feeding." ARMSTRONG (*J. A. M. A.* 91:613, Sept. 1, '28) writing on health guidance says it is necessary to get physicians in increasing numbers to practice preventive medicine and teach personal hygiene, and the public must be made more fully aware of the needs in this field. The suggestion is made that a local bureau be formed for the education of the people, which would arrange for individuals to see competent physicians. The health supervision of executives in industry has been described by MURRAY (*J. A. M. A.* 91:627, Sept. 1, '28). These men were examined at one time and diseases and minor

defects noted. Inquiries were made into their ways of eating and mode of living and hygienic advice given. Errors in diet, excessive smoking, insufficient rest, lack of exercise, were some of the faults found. In another check up made later many of the minor defects had been corrected, and more than 50% of the bad habits had been changed with improved health.

In an address BEST (*Canada M. A. J.* 18:379, Apr., '28) relates aspects of physiological hygiene. Ordinarily in a course of hygiene the principal causes of death are first taught, but instruction in the methods of maintaining health should precede a study of the factors that produce disease and death. The value of fresh air, proper household heating and humidity, good light, the subject of diet and nutrition, the benefits derived from muscular exercise, etc., are given the most consideration. In an illuminating paper by BEARD (*Illinois M. J.* 53:257, Apr., '28) the necessary foundation for the health movement is described. "Science is not secret information but public truth, the birth right of all. It touches life at every point, yet is valueless to the average man unless he is either taught to make use of its principles or select someone capable of doing so for him. This means that each individual has to be educated. . . . This education to be effective must begin with prospective parents and guide the child through infancy and childhood. In the elementary school it must teach the rules of healthful living, and in schools and colleges so instruct the future community leader in hygiene that he will be prepared to grapple successfully with the health problems of his home, community, and vocation." The teaching of Hygiene by JAMESON (*Brit. M. J.* 2:733, Oct. 27, '28) not only takes up public education in health, but also relates the training of health workers, as medical students, sanitary inspectors, health visitors, midwives, etc. At the end he quotes HORDER in pointing out out that there are not "secrets of good health. Health is a broad and well paved road; Nature is both an excellent road maker and mender. Not only does it require very little skill, and but a modicum of good fortune to keep it; the wayfaring man must be a fool indeed if he errs therein."

PRECAUTIONS URGED TO CHECK TRACHOMA

The United States Public Health Service points out in a survey of the fight on trachoma that, due to the campaign carried on in conjunction with State agencies, the disease has been almost entirely wiped out in some areas, although it still exists to a dangerous degree in several States.

The organized trachoma prevention work of the service in co-öperation with the States began with the extensive survey made in Eastern Kentucky in 1912 by Dr. John McMullen. This survey, which was in response to a request from the Kentucky Health Department, showed that trachoma was extremely prevalent and constituted a major health problem in that section. Later studies showed that the disease existed in several other States.

The service for several years has maintained small hospitals for the treatment of trachoma, located at strategic points in affected areas. At present trachoma hospitals are being conducted in Kentucky, Tennessee and Missouri, with the financial and moral co-öperation of these States.

"In many localities the trachoma work conducted by the Public Health Service has given the people their first view of public health work of any sort and their first idea of the possibility of disease prevention," says the survey.

STATE AID HELPFUL.

"It is easier for State health authorities to persuade a county to install a full-time health department if energetic trachoma eradicative measures have been undertaken in that county. Conversely, it is possible to do much more effective trachoma prevention work with the assistance of a well-organized county health department, especially when the State Health Department is manifesting an active interest in the campaign.

"Evidence which has accumulated as the work has progressed indicates that Missouri and Arkansas probably have as much trachoma as Kentucky had when the work began, and that it exists to a dangerous extent in several other States. It is not uniformly prevalent throughout any State; some communities are heavily infected, while others are relatively or completely free from it.

"Resurveys conducted from time to time show the beneficial effect of this trachoma eradicative work. In certain areas trachoma is about to become a thing of the past as a result of the work done in those areas within recent years.

"The trachoma hospitals have a fourfold function. First, the clinical treatment of trachoma for the purpose of preventing damage to sight and stopping the patient from being a spreader of the disease. Second, a study of the disease itself. The physicians engaged in this work are constantly on the alert for improved methods of diagnosis and treatment. Third, education of patients in personal hygiene and disease prevention. Fourth, the trachoma hospitals are centres for operations directed toward the eradication of this disease.

"The trachoma hospital of the Public Health Service, located at Richmond, Ky., makes trachoma treatment available to an enormous area in Eastern Kentucky where trachoma is still quite prevalent. Certain counties have become almost trachoma free, but in others the spread of the disease seems not to have ceased. This hospital is well equipped and can care for about thirty patients. On the day the hospital was opened a man was admitted who had been unable to work for three years on account of defective vision from trachoma. He had a wife and four children, the youngest of whom he had never seen. He was led into the hospital by a friend and was for all practical purposes completely blind. After three months' treatment he returned home with good working vision, and when last heard from was earning $100 per week as a expert machinist. This illustrates not only the humanitarian but the economic value of this work.—*New York Times.*

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.

F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 15261

PAIN IN THE LEFT CHEST AND DYSPNEA

MEDICAL DEPARTMENT

A married Swedish-American woman thirty-eight years old entered January 12 complaining of pain in the left chest and difficulty in breathing.

For eight months she had been gradually losing strength. Two days before admission the pain awakened her. It was localized, was pleuritic and required morphia for relief. She vomited several times, once a small amount of blood. The day before admission the pain subsided somewhat, though it was still severe. The day of admission she could breathe only in the upright position and then with difficulty. She tolerated liquids fairly well, no solids. Her bowels were constipated. Since the onset she had lost fifty pounds.

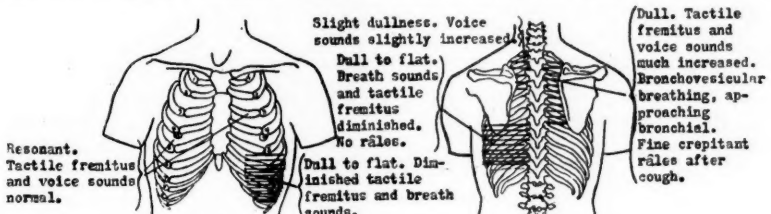
Her mother, father, three sisters and a brother died of tuberculosis. The patient took care of her mother for several months.

Her first husband infected her with syphilis and then left her. She was treated in the Out-Patient Department of this hospital and at another dispensary for twenty years. For the first nineteen years she never had a positive Wassermann. A syphilologist of this hospital gave her "a clean bill of health" before her second marriage. She had three children by her second marriage; one three years old and twins seven months old. In both cases she had cesarean section.

Until her first marriage, nineteen years before admission, she was well and strong. Four years before admission she was in a sanitarium for tuberculosis for five months. While there she had hemoptysis. She gained thirty pounds. Since the birth of her first child she had urinated once at night. Following the birth of her twins she had "milk legs". She was treated in the Out-Patient Department for this and for deep varicose ulcers.

Records of the Out-Patient Department show that she first came to the South Medical Department eighteen years before admission. Her record for the first four years has been lost. During the fourteen years covered by her record repeated blood Wassermanns had always been negative. Her spinal fluid was also negative. Nine years before admission she came with a sore on her ankle. She was given several injections of iodobismuth quinine. Two years later she complained of pain over the right scapula. X-ray examination showed small dense areas scattered throughout the right upper lobe and left apex. Two years after this a diagnosis of subacute bronchitis was made. X-ray examination at this time showed tuberculosis. The patient was followed in the Pulmonary Clinic, where a definite diagnosis of tuberculosis was made both clinically and by X-ray. During these years she had no hemoptysis and no bacilli in the sputum. For the two years before admission she had had quartz lamp treatment for varicose (possibly luetic) ulcers.

Clinical examination showed an undernourished woman with increased respiratory rate. Skin clear except over the lower third of both legs, where there were deep brown patches enclosing atropic scars. On each ankle was an ulcer covered with purulent exudate. The right chest expanded slightly more than the left. Lung signs as shown in the diagram. Heart examined lying down. The location of the apex impulse is not recorded. Left border of dullness 8 centimeters from midsternum, 1 centimeter outside the midclavicular line, right border 2 centimeters to the right, supracardiac dullness 5. Sounds, action and rhythm normal. An apical systolic murmur. Pulses and arteries normal. Blood pressure 130/90. Abdomen: marked diastasis recti. Dullness and tenderness in the costal angle of the epigastrium with a sensation of a mass. Extremities, pupils and knee jerks normal. Ankle jerks not examined. No clonus or Babinski.


Slight dullness. Voice sounds slightly increased.
Dull to flat. Breath sounds and tactile fremitus diminished. No râles.
Resonant. Tactile fremitus and voice sounds normal.
Dull to flat. Diminished tactile fremitus and breath sounds.
Dull. Tactile fremitus and voice sounds much increased. Bronchovesicular breathing, approaching bronchial. Fine crepitant râles after cough.

Urine normal in amount, specific gravity 1.024 to 1.028, a trace of albumin at both of two examinations, hyalin and granular casts and a few leukocytes at both sediment examinations. Blood: 19,400 to 6,500 (?) leukocytes, 84 per cent polymorphonuclears, hemoglobin 70 to 65 per cent, reds 3,825,000, slight archomia, smear

otherwise normal. Wassermann negative. Blood culture: no growth. Sputum: no tubercle bacilli at five examinations.

Temperature 98° to 103° by rectum; evening rise on only three days. Pulse 110 to 147. Respirations 18 to 57.

X-ray examination showed mottled dullness at both apices, more marked on the left. Some of these shadows were quite dense, suggesting an old process. The diaphragm was rather high on both sides. There was dullness at the left base from the angle of the scapula to the diaphragm, increasing toward the diaphragm, obliterating the outline of the diaphragm and the costophrenic sinus. The lung markings were prominent throughout the chest.

The patient appeared cyanotic at times. A to-and-fro friction rub was heard in the left axillary region January 14. January 16 she cried out in the night with sharp colicky pain in the lower abdomen. The abdomen was much distended and showed general tenderness. The lung signs were unchanged except for increase in dullness at the left base and a small patch of bronchial breathing in the lower axillary region. The following day the general condition was much worse. She ate nothing, and during the next few days became very weak. A subpectoral was given to maintain fluids, as she vomited when fluids were forced. Pronounced distention persisted in spite of cathartics, stupes and enemas. The dullness at the left base became less. The râles at the right apex increased. January 20 there was some tenderness over the epigastrium and the right lower quadrant. She complained of epigastric pain. January 21 she died.

Discussion

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

With pain in the left chest and difficulty in breathing at that time of the year what is the first guess that comes into your mind? Pneumonia. It is perfectly right and proper to make a snap diagnosis so long as you do not stop there.

After eight months we begin to doubt pneumonia. Pneumonia does not last eight months.

What do you suppose "pleuritic pain" means? Is every pain that is sharp and that comes with deep breathing pleuritic? I do not know what the word means. It probably means that the man who wrote the record thought that the patient had pleurisy. I do not know anything about "pleuritic" pain. Until we have heard a friction rub or have had a tap we do not know that a pain in the side is pleurisy. That is making a diagnosis before getting the facts. This is probably not pleurisy at all. It may be muscular.

The fact that she was in a sanitarium does not prove that she had tuberculosis. I know of many people who have spent a long time in a sanitarium for tuberculosis who never had it at all. I met one gentleman at the San Francisco exposition. A portable X-ray machine was shown as part of the exposition. The X-ray showed a tack, perfectly clear and recognizable, which he had had in his lung for a number of years and which had produced pulmonary abscess. He had been treated for tuberculosis in a sanitarium for years. Being treated in a sanitarium does not prove that she had tuberculosis, but the hemoptysis makes it seem likely that she had it.

Maybe urination at night was merely habit and has no pathological significance. In such cases it usually has lasted since youth. If in a person who has not had that habit it begins at a certain period, it suggests a local prostatic disease in males, or kidney trouble in either sex.

The "South Medical" Department is a euphemism. When we send a patient to "South Medical" we know that a diagnosis of syphilis has been made by somebody in this hospital. It is the Syphilis Department.

I should advise you never to make a diagnosis of subacute bronchitis unless you have opinions from several consultants. It is a very rare disease, and a very difficult diagnosis to make. It is much safer to call it tuberculosis and let it go at that.

NOTES ON THE PHYSICAL EXAMINATION

I do not think anybody knows enough to recognize a syphilitic scar. Syphilologists say there is no such thing. Perhaps the location of scars may have something significant in it. Deep scars on the forehead, deep scars on the shin bone are sometimes suggestive, but the scar itself is not characteristic.

We could not ask for anything more than the lung signs on the right in this case as evidence of tuberculosis except bacilli in the sputum. The signs show a still active but long-standing tuberculosis, still active because of the râles, although that does not prove it active, long-standing because of the dullness. There is probably a thickened pleura, especially at that point. The lung examination sums up to an active process at the right top and an old process at the left base, the left base process probably not active at this time.

I do not believe in percussion of the heart. Most of the physicians in this hospital still do, so that you will find it in every record. The heart was one centimeter outside the midclavicular line. It should not go outside the midclavicular line. I believe that this heart will be in the right place when we come to autopsy. Supracardiac dullness is most unreliable, I think.

I do not think the apical systolic murmur is important. I predict that the heart will be found sound, on the basis of the verification of that prediction so many times in the past twenty years. You say, why the murmur? I do not

know. But from experience in these pathologic and clinical discussions I can say that an apical systolic murmur and nothing else wrong with the heart means a normal heart. There is no evidence of arteriosclerosis here, and the pulse has no special shape (like Corrigan or plateau pulse.)

"Dullness and tenderness in the costal angle of the epigastrium with a sensation of a mass" does not mean anything. In a great many cases you have all those things and nothing there but the normal liver. The chances are that is what it is here.

The urine examination is perfectly compatible with the low degree kidney trouble or with normal kidneys. We often get those casts in normal persons, especially people who recently have had fever, as this patient had, or suppurative disease, as she probably had in her lungs. We do not need to suppose kidney trouble.

If you fail to find tubercle bacilli at one examination, it does not mean anything; but if you keep on and know how to look and are conscientious and do not find them five times they probably are not there. It does not of course mean that the patient has not tuberculosis, but that the bacilli are not coming out.

You undoubtedly have diagnosed this as tuberculosis, but I am rather surprised that the X-ray shows so much of it at the base. Tuberculosis hits the apex of the lung ninety-nine out of a hundred times. This plate shows a diffuse process chiefly at the base, so that I begin to be a little uncertain as to whether it was tuberculosis; but the physical signs point to it.

The friction rub shows pleurisy presumably.

The tenderness of the abdomen suggests peritonitis. We have to say, where did that come from? Was there perforation of a tuberculous lesion?

The persistence of the distention shows that it was not simply wind.

DIFFERENTIAL DIAGNOSIS

Is it tuberculosis peritonitis, an extension from tuberculosis of the lungs? Does anybody think she did not have tuberculosis of the lungs? Nobody? I express, then, your unanimous diagnosis. She had tuberculosis of the lungs. I can think of no other diagnosis unless she had tuberculosis of the intestinal tract and possibly perforation with production of septic peritonitis, because tuberculous peritonitis as such does not give such violent symptoms.

A PHYSICIAN: How do you rule out pneumonia?

DR. CABOT: I cannot, but I do not need to suppose it. Tuberculosis of the lungs can cause all the things she had, and statistics show that if you can make one diagnosis cover all the signs, you are more likely to be right than if you make several diagnoses. So one always tries to make a diagnosis stretch as far as it can go.

A PHYSICIAN: How about the blood count?

DR. CABOT: The blood count corresponds with tuberculosis. There is no count in the world that you cannot have with tuberculosis,—high leukocytes, low leukocytes, anything. I have made many thousands of those counts and base my statement on that. The polymorphonuclears, the leukocytosis and the acute symptoms are probably from septic infection on top of tuberculosis.

What shall we find in the heart? I say we shall find nothing, a normal heart.

What shall we find in the liver? We might find amyloid, the result of a long-standing tuberculosis. We have every reason to suppose she had had long-standing tuberculosis. We have good reason to suppose she had syphilis. So she has two causes for amyloid of the liver, spleen and kidneys. There is no way to make a sure diagnosis of amyloid. It is always a guess, fairly reasonable in this case.

A PHYSICIAN: When was the X-ray film taken?

DR. CABOT: January 14, just a week before she died.

Did we examine the brain?

DR. TRACY B. MALLORY: No.

DR. CABOT: Then we will not waste time in speculating about it, as he did not open it. We have no reason to suppose tuberculous meningitis.

What about syphilis? Where will it show? What is the favorite place for syphilis to show if it does show after death? The arch of the aorta is the commonest place. I could not name any other place where we are justified in looking. The liver perhaps; but we found nothing in the clinical examination to suggest syphilis of the liver. Either syphilis will not be there at all, or it will be in the aorta as syphilis of the aorta. I say this simply from experience in these autopsies. In the majority of cases where the Wassermann is negative for a long time and where we have not seen anything like tabes or aortic regurgitation, we find nothing after death. So when we have not any of those things we had better not say syphilis. If it is there it will be in the arch of the aorta.

A PHYSICIAN: How about syphilis of the lungs?

DR. CABOT: That is a diagnosis I never make. I do not know how. There is no clinical picture of syphilis of the lungs. I do not remember seeing a case of syphilis of the lungs proved by an unquestioned autopsy. I do not think it is yet on the map.

A PHYSICIAN: There was a case in Los Angeles of shadow in the lower lung, and a diagnosis of syphilis was made.

DR. CABOT: Did they get a post-mortem?

A PHYSICIAN: I think so.

DR. CABOT: It was an unusual autopsy.

A PHYSICIAN: Are the leg ulcers syphilitic?

DR. CABOT: They could perfectly well be syphilitic or varicose.

A PHYSICIAN: Could it be a case of actinomycosis?

DR. CABOT: That is a good suggestion. They did not find it in the sputum, however, and unless we find it there we can do no more than suggest it. It usually starts in the neck or in the bones of the chest and not in the lung itself.

INTERPRETATION OF X-RAY

The findings at the left base are consistent with pneumonia.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Bronchopneumonia (tuberculous?)

DR. RICHARD C. CABOT'S DIAGNOSIS

Tuberculosis of the lungs.

Perhaps tuberculosis of the intestinal tract, possibly with perforation and septic peritonitis.

ANATOMIC DIAGNOSES

1. *Primary disease.*

Pulmonary tuberculosis.

2. *Secondary or terminal lesions.*

Acute streptococcus focal pneumonia.
Ulcers of the stomach with perforation.
Tuberculous peritonitis.
Acute fibrinopurulent peritonitis.

DR. MALLORY: This woman had an extensive tuberculosis of the lungs with cavities at both the right and left apices. There was also a terminal pneumonia due to the streptococcus, not to the tubercle bacillus. That was in the lower lobe of the left lung. There was a fairly dense fibrinous exudate over that portion of the lung, but no fibrous thickening of the pleura. There was a slight amount of fluid, 120 cubic centimeters, probably not enough to diagnose.

The heart and aorta were entirely negative.

There was no anatomic evidence of syphilis to be found.

The other findings of interest were in the peritoneal cavity, and were distinctly unusual. She had in the stomach two circular, sharply punched out gastric ulcers, one of which showed perforation. The immediate cause of death was general peritonitis from the perforated gastric ulcer. In addition to this general peritonitis there was a localized tuberculous peritonitis restricted to the left upper quadrant, most marked in the immediate region of the ulcer itself, and involving the lower surface of the left lobe of the liver and the spleen. Whether that ulcer of the stomach was of tuberculous origin I do not know. We could find no definite evidence histologically that it was. On the other hand tuberculous ulcers of the stomach are not unknown. They are very rare; but in looking over the literature I find an average of about three or four papers on the subject every year for the past ten or fifteen years. This may have started as a tuberculous lesion and then from the action of the gastric juices all traces of the origin of the process were wiped out. The fact that the miliary tubercles in the peritoneum were most closely clustered immediately about the ulcer makes me feel that whether or not the ulcer was primarily of tuberculous origin, it was through the ulcer that the organisms invaded the peritoneal cavity.

A PHYSICIAN: Was there no amyloid?

DR. MALLORY: There was no amyloid. The kidneys were entirely negative.

A PHYSICIAN: How do you explain the to-and-fro friction rub?

DR. CABOT: It is explained on the grounds of pneumonia with pleurisy.

A PHYSICIAN: He had pleural exudate?

DR. CABOT: You always get a pleural exudate with pneumonia.

I should like to emphasize (1) the point about systolic murmur at the apex with a normal heart. That is proved.

(2) In the second place syphilis is a very dangerous diagnosis to make if a post-mortem is in sight. I have made a great many diagnoses of syphilis here with Dr. Mallory and others, but have generally been shown wrong. I have grown gun-shy in making diagnoses of that disease unless we have proved such things as tabes or chronic interstitial orchitis or a heart lesion proceeding from the aorta. It took me a good while to find that out. It is the result of bitter experience in being shown wrong here. I think it means that syphilis is generally cured. We have been unduly pessimistic about it. I do not doubt that this woman had syphilis, but at the time of death she was over it.

(3) We find normal kidneys with albumin and casts in the urine.

We often have tuberculosis with no bacilli in the sputum.

A PHYSICIAN: In very extensive tuberculosis?

DR. CABOT: Yes.

DR. MALLORY: I might add that routine stains for tubercle bacilli as done in most hospitals are not entirely reliable. We frequently find in checking over a smear that someone else had made that we may succeed ourselves in finding the organism. On the other hand sometimes we miss them and someone else finds them. The stain does not work one hundred per cent in everyone's hands.

CASE 15262

WHAT WAS THE RIGHT UPPER QUADRANT TUMOR?

SURGICAL DEPARTMENT

A married New England woman of sixty-eight entered April 20 complaining of pain in the right upper quadrant. She was in great distress and gave a rambling history.

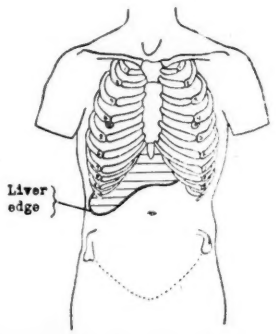
Twenty-four years before admission she had an attack of very severe pain in the right upper quadrant and the epigastrium lasting ten days, requiring morphia and accompanied by jaundice. Since that time she had noticed a soft lump the size of a large walnut just below the right costal margin. During the subsequent attacks the lump increased slightly in size, decreasing afterwards. For the next year or two she had similar but milder attacks every two months or so. Then they came at longer intervals for a few years. For some years she had none. Then they recurred. For the past few years she had had them every month or two. For a year she had been unable to work. For the past few months she had had attacks every week or two lasting from two to eight hours or longer. Many occurred in the night and lasted until morning. Often her abdomen became distended. The present attack began four days before admission and was becoming almost as severe as the first. With it she had had much vomiting.

Records of the Out-Patient Department show an X-ray examination February 20. The positive finding was ptosis. There was no evidence of organic lesion of the stomach or duodenum.

The patient's mother died insane following a severe attack of grippe.

The patient had stomach trouble with colic at eleven years, and continued to have from two to six attacks a year of varied intensity. At twelve she had scarlet fever. She had had influenza and tonsillitis. Ten years before admission she had dyspnea and was told she had high blood pressure. She had not had much dyspnea since that time, but had had palpitation with attacks of gas. She had lost 43 pounds in a year.

Clinical examination showed a very much wasted woman. Tongue dry, smooth, atrophic, with several small shallow ulcerations through the mucous membrane of the anterior surface. Deviation of the nasal septum with obstruction. Heart and lungs normal. Blood pressure 175/75. Abdomen flat, with a large fold of loose, thin, dry skin. A firm smooth liver edge, not tender, was felt below the costal margin, as shown in the diagram. Rectal examination negative. Pelvic examination not remarkable. Left shoulder ankylosed, with atrophy of the muscles, especially the deltoid. An operative scar parallel to the humerus on the outer aspect. The fingers showed Heberden's nodes. Pupils contracted, regular, reacted slightly to light. Knee jerks normal.



Before operation 50 to 120 ounces of urine, specific gravity 1.020 to 1.010, 8 to 10 leukocytes per field at the single sediment examination. Blood before operation 10,600 to 28,400 leukocytes, 80 per cent polymorphonuclears, hemoglobin 80 per cent, reds 4,420,000, smear normal. April 27 Hinton negative. Icteric index: 17 on April 24, 12 on April 27, 40 on May 1. Bleeding time one minute. Clotting time five minutes. Stool: bile negative. Sedimentation rate: 35° in 30 minutes; 49° in 85 minutes. Hematocrit: 42 per cent cells, 58 per cent plasma. Liver function test: 35 per cent retention.

A Graham test showed the gall bladder visible. In its region there was a faceted shadow which had the characteristic appearance of gall stone.

The patient had little pain after the day of admission. April 28 she looked much better, though she continued to be dehydrated. A mass was noted in the right upper quadrant just below and apparently not connected with the liver, and running into the right flank to just below the level of the umbilicus. It was somewhat freely movable and seemed to go well through into the back by bimanual palpation. It was not tender and seemed to move with respiration. It was not lobulated and felt not unlike a large kidney.

Cystoscopy was done on May 1. The appearance time at the right ureter was ten minutes. The function of the right kidney was 1.2 per cent. The right urinary sediment showed 5 to 7 red cells; no leukocytes or casts. The appearance time at the left ureter was 7 minutes. The left kidney function was 5 per cent. The sediment of the left urine showed occasional red cells, 2 to 3 leukocytes. The bladder appeared normal. Sediment of the bladder urine was negative. A pyelogram showed that the opaque catheter on the left reached the third lumbar vertebra. The catheter on the right extended to the midportion of the sacro-iliac joint. After injection the right kidney pelvis and calices appeared low, the lower calyx being opposite the iliac crest. There was slight dilatation of the renal pelvis. The ureter was not remarkable. Films of the gall bladder again showed in the region of the gall bladder a ring-like shadow which had the appearance of gall stone.

A barium enema passed to the cecum without delay. The colon was low. Because of a large amount of gas in the colon the examination was unsatisfactory. There were no gross lesions, and as far as could be determined the colon was negative.

May 2 operation was done.

Discussion

BY WILLIAM M. SHEDDEN, M.D.

In considering the differential diagnosis of lesions in the right upper quadrant, biliary tract disease is one of the major conditions to be thought of. It occurs frequently and is confused with gastric and duodenal lesions. One of the factors pointing to cholecystitis in this case is the history of irregular attacks of right upper quadrant pain, and the fact that she had jaundice tends to reënforce the diagnosis.

A factor pointing to obstruction of the cystic duct of the gall bladder is the history of the above mentioned pain plus a palpable mass. We might imagine a stone passing through the common duct giving her pain and jaundice which cleared up and then another stone becoming wedged in the cystic duct. The vomiting is not an uncommon accompaniment of severe pain, particularly the pain associated with the distention of a hollow organ. Distention of a renal pelvis in pyelography will sometimes cause nausea and vomiting.

The fact that she had an X-ray examination of her stomach and duodenum which was negative of course leads us away from those organs towards the biliary tract, but does not exclude the upper gastro-intestinal tract. The story of abdominal distention and of attacks of gas would go with either a lesion of the stomach and duodenum or one of the biliary tract.

There is no mention of any periodicity of her pain, which would perhaps be a point against an ulcer of the stomach or duodenum. She has lost a lot of weight, forty-three pounds in a year, and that coupled with the history of a mass in the right upper quadrant would make us at least consider malignancy, possibly of the gall bladder, bile ducts or pancreas. Malignancy of the bile ducts is most often accompanied by a progressive jaundice, and pain is not an outstanding symptom. Carcinoma of the head of the pancreas will usually give a painless jaundice.

Her tongue is dry, her skin is dry; in other words she is definitely quite dehydrated. That coupled with her age, sixty-eight, and the fact that she is very much wasted would lead one to attempt to get her in better shape if possible before considering operation. The large fold of loose skin on her abdomen checks with the loss of weight.

At entrance there was no particular tenderness in the right upper quadrant, but she apparently had a liver edge which was easily felt. This could mean either that her liver was ptosed or enlarged. Her normal pupillary reflexes and knee jerks and the negative Hinton test are points against seriously considering gumma of the liver to account for the right upper quadrant mass. The specific gravity of her urine varies from 1.010 to 1.020, showing that she can have little if any chronic nephritis and making her from that point of view a good operative risk. Her white count of 20,000 with 80 per cent polymorphonuclears plus a temperature of 100.5° on May 1 suggest a flare-up of infection, possibly in the biliary tract. The icteric index went up from 17 to 40 on May 1. The high normal icteric index is about 10, so that it would seem that operation must not be delayed too long for fear of increasing the clotting time. Her clotting time on April 29 was five minutes, well within normal time. It takes about three weeks for the jaundice of complete obstruction to affect the clotting time. The bleeding time of one minute is normal. Bile was shown to be absent from the stool at one examination, but normal stools will sometimes give a negative test for bile. The liver function test of 35 per cent retention suggests a good deal of liver damage or a fairly complete obstruction. The Graham test reënforces the suggestion of cholelithiasis.

Because of the mass it seemed wise to rule out a renal tumor, although there was no history of hematuria and no microscopic blood in the urine. The large mass plus a good deal of weight loss in a year should make us consider a renal tumor, and of course the most common renal tumor would be hypernephroma. The pyelogram however showed apparently a normal renal pelvis. It would be possible to have a normal renal pelvis and still have hypernephroma, but if the mass above described were all tumor it would be very unlikely that we should have a normal pyelogram. The few red cells in the sediment from each ureter although the urine from the bladder during cystoscopy was negative makes the first finding of no significance, for the trauma of ureteral catheterization can cause bleeding. The renal function on the right being only one-fifth that on the left would be of importance if confirmatory of other renal findings. Alone it does not concern us, as the split renal function is often unreliable due to variation in drainage through ureteral catheters and also to the inability to read correctly such a low relative percentage of phenolphthalein in the urine.

Measures were taken to overcome her dehydration. She was given numerous hyperdermoclyses. It was finally thought wise to explore her right upper quadrant (1) because she was becoming increasingly jaundiced, (2) because of the mass recently found, (3) because she was still having discomfort, (4) because of her increasing temperature and white count.

PRE-OPERATIVE DIAGNOSIS

Cholecystitis.
Probably cholangitis.
Probably cholelithiasis.

Possibly hydrops of the gall bladder.
Possibly an elongated right lobe of the liver (Riedel's lobe).

OPERATION

Spinal novocain. On opening the abdomen a Riedel's lobe of the liver was found extending well down below the umbilicus. There was a dense mass of adhesions in the region of the gall bladder. These were separated with great difficulty as there was practically no line of cleavage. The surgeon then came down on a gall bladder only 3 centimeters long and 2 centimeters wide with very dense fibrous walls. This was freed down to the common duct. In view of the general condition of the patient it seemed unwise to do a cholecystectomy. The duct was then opened and explored. No stones were found. Salt solution was washed from the common duct down into the duodenum through a catheter. A catheter was then placed in the common duct and sutured in place with a 00 continuous catgut stitch. It was impossible to place a tube in the gall bladder, as the opening was too small. A cigarette wick was placed to the kidney fossa.

FURTHER DISCUSSION

It is rather interesting, in view of the fact that obstruction in the common duct seemed likely before operation, that no stones could be found in the gall bladder or the ducts on exploration. Possibly she had passed them out before operation. Certainly she had no complete obstruction, as a small catheter could be passed down the common duct into the duodenum and salt solution washed into the duodenum. The gall bladder itself was one of those tiny end results of long-standing cholecystitis.

FURTHER HISTORY

May 6 the patient was comfortable and the wound normal. The tube in the common duct drained profusely. It accidentally slipped out of the wound into the dressing. This was followed by a low-grade inflammatory process about the incision edges. The rest of the convalescence was uneventful. The patient looked less icteric after the operation, and improved remarkably in every way. May 23 she was discharged to a convalescent home.

FURTHER DISCUSSION

The patient recovered fairly promptly, although the tube in the common duct came out.

Riedel's lobe is of course a not uncommon abnormality. It is frequently confused with a large gall bladder, or prolapsed or enlarged right kidney. In 1905 Dr. John Finney found a Riedel's lobe attached to the epigastric flexure of the colon, producing a partial intestinal obstruction. In 1888 Riedel first called attention to this rather curious anomaly of the liver in the shape of a tongue projecting at times well below the costal border. The probable causes of this condition that are to be considered are: (1) congenital deformity, (2) tight lacing, (3) the pushing down of this portion of the liver by an enlarged gall bladder, (4) the drag of adherent prolapsed intestine or other abdominal viscus. Riedel called attention to the fact that it is much more common in women than in men. He also mentions the fact that after evacuation of the gall-distended bladder this lobe has a tendency to diminish in size rather rapidly. These observations by Riedel have been abundantly confirmed by many surgeons.

Abnormalities of the liver are very rare, for the liver is one of the most stable organs in the body.

DIAGNOSIS

Chronic cholecystitis.
Possibly cholelithiasis with stone in the common bile duct.
Probably cholangitis.
Riedel's lobe of the liver.

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POTASSIUM PERMANGANATE IN PNEUMONIA

DR. JOHN L. CHESTER reports in the *Annals of Internal Medicine* for May, 1929 two small series of cases of pneumonia treated with a solution of potassium permanganate. Remarkable results are claimed for this method of treatment which consists in the administration of four ounces of the solution as a retained enema every three days for a period of eight days. Out of twenty-three cases treated at Providence Hospital, in Detroit, twenty-one recovered. At Eloise Hospital, Michigan, an institution maintained by the Poor Commission, twenty unfavorable cases were selected; of these, ten received orthodox treatment and all died. The other ten received the potassium permanganate treatment and fifty per cent. recovered.

Pneumonia is one of the conditions in which therapeusis statistics are notoriously unreliable. Many methods of treatment have been devised, and with many of them excellent reports have at first seemed justified. On the whole, however, hospital mortality statistics have varied very little from decade to decade. Obviously no conclusions can be drawn from a series of forty-three cases, of which ten were used as controls. With pneumonia the dread disease which it is, however, and with its mortality maintained at such an appalling figure, it seems to be our duty to employ, until a logical conclusion is reached, any hopeful form of treatment which does not present the possibility of being actually detrimental to the patient's chances of recovery.

THE ERGOT CONTROVERSY

A WORDY, if one sided, battle has been waging between one Howard W. Ambruster, of New York, and the Attorney General and Secretary of Agriculture of the United States concerning the admission to this country of "adulterated and putrid" ergot of rye for medical usages. Mr. Ambruster's indignation has now extended to certain officers of the American Medical Association who, he claims, have failed to reply to any of his letters since January 25, 1928, when he was informed that the American Medical Association was not interested in the matter of the use of rotten ergot. The Attorney General and the Secretary of Agriculture, according to Mr. Ambruster, have replied to his accusations of permitting the importation of rotten ergot, only to the extent of playing the old army game of passing the buck, one to the other and vice versa.

Mr. Ambruster's correspondence, many copies of which have been received by the JOURNAL, do not reveal who Mr. Ambruster is, nor the origin of his interest in imported ergot of rye; whether it is entirely philanthropic or whether he is not entirely disinterested. If he is in any way connected with domestic ergot interests he does not reveal himself as such with the same frankness as do the sugar versus the cigarette interests; rather he prefers to labor behind the screen of a pure hearted interest in innocent motherhood, which, after all may well be the case. We simply feel that we could evaluate his interest better if he told more about himself.

It is difficult, of course, to decide properly the merits of a controversy which is purely one-sided, and to date the JOURNAL has heard of no defense offered either by the Federal Department of Agriculture, the Attorney General of the United States, or the American Medical Association. Until more accurate information is at hand it seems proper to believe that they are not troubling themselves to answer unjust accusations rather than that they have entered into a conspiracy to defraud the public and sacrifice innocent motherhood on the altar of profitable, if putrid, ergot.

However, we are now informed by Mr. Ambruster that the Council on Pharmacy has this year thrown out five well known brands of ergot preparations because they contain putrid matter and are less than 10 per cent. of the strength claimed in ergot, so that it seems wise still to withhold a decision.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

FULTON, JOHN F. S.B., A.B., A.M., Ph.D., M.D. Harvard 1927. Research Fellow in Natural Science, Magdalen College, Oxford. Formerly, Junior Associate in Surgery, Peter Bent Brigham Hospital. His subject is: "Robert W. Smith's Description of Generalized Neurofibromatosis (1849)." Page 1315. Address: 29 Charlbury Road, Oxford, England.

LEECH, CLIFTON B. S.B., M.D. Boston University School of Medicine, 1919. Chief Cardiac Service, Union Hospital, Fall River, 1923. Cardiologist, Fall River General Hospital, 1927. Cardiac Fellow in Pediatrics, Johns Hopkins University; Director Cardiac Clinic, Harriet Lane Home, Johns Hopkins Hospital, 1928-1929. His subject is: "The Association of Gall Bladder Disease and Heart Disease." Page 1317. Address: 605 Roland Avenue, Baltimore, Maryland.

MURRAY, HALSTEAD G. M.D. Queens University, 1919. Assistant Instructor in Industrial Hygiene, Harvard School of Public Health. Full time Industrial Physician, Dennison Manufacturing Company, Framingham. Address: 81 Dennison Avenue, Framingham, Mass. Associated with him is:

COOLIDGE, EVELYN. R.N. Graduate Waltham Hospital School of Nursing. Formerly Instructor, Simmons College School of Public Health Nursing. Now Industrial Nurse Dennison Manufacturing Co., Marlboro, Factory. Their subject is: "Health Work in Industry." Page 1321.

LEE, ROGER I. A.B., M.D. Harvard 1905. His subject is: "Treatment of Pernicious Anemia, Especially by Liver." Page 1324. Address: 264 Beacon Street, Boston.

BURNETT, FRANCIS LOWELL. S.B., M.D. Harvard 1906. Research on Nutrition and Health after Eczema and Psoriasis, Massachusetts General Hospital; after Iritis, Massachusetts Eye and Ear Infirmary; after Arthritis, Peter Bent Brigham Hospital. His subject is: "Progress in Nutrition." Page 1329. Address: 205 Beacon Street, Boston.

MISCELLANY

SEDGWICK MEDAL AWARD

The American Public Health Association announces that the first award of the Sedgwick Memorial Medal will be considered in 1929. This award was established in honor of the late Professor William Thompson Sedgwick, a former President of the American Public Health Association. The fund which provides the medal was raised by popular subscription from Professor Sedgwick's former students and friends. It is to be awarded for distinguished service in public health.

Except for the fact that it is limited to the recognition of service in the field of public health there is no restriction as to the special line of service that will be considered. Administration, research, education, technical service and all other specialties in the public health profession will receive equal consideration. No limitations as to age, sex or residence have been fixed, though only candidates who are nationals of the countries in the American Public Health Association,—at present, United States, Canada, Cuba and Mexico are eligible.

The committee of the Association which has this matter in charge is composed of:

Mr Homes N. Calver, Secretary
Dr. Charles V. Chapin
Dr. Lee K. Frankel
Professor E. O. Jordan
Dr. George W. McCoy
Dr. M. P. Ravenel
Dr. M. J. Rosenau, Chairman
Mr. Robert Spurr Weston

The committee will not consider direct application from candidates, but asks for nominations, giving the information suggested in the accompanying form. Nominations should be addressed to the Secretary, Homer N. Calver, 370 Seventh Avenue, New York, N. Y., and should include the following:

Name of the proposed candidate
Residence address
Business address
Age
Country of which the candidate is a citizen
Degrees held, date received and institutions from which received
Principal public health positions held
A brief description of the distinguished service performed because of which the candidate is recommended for consideration. This should include information as to when and where the work was done, the name of the organization or institution, if any, under whose auspices or in whose service the candidate worked, an estimation of the direct or indirect effect of the work measured in terms of life-saving or benefit to humanity. Descriptive articles, reports or similar data published or unpublished will be helpful to the committee. To be considered, the service must have been actually performed and not be merely a plan or suggestion.

Anonymous recommendations will not be considered and the committee reserves the right to refrain from making an award this year.

AN ADDITION TO THE LEONARD WOOD MEMORIAL FOR THE ERADICATION OF LEPROSY

Announcement has been made of the contribution of fifty thousand dollars from the estate of Annie C. Kane to the Wood Memorial for the Eradication of Leprosy. This brings the endowment up to one million two hundred and fifty thousand dollars. More than fifteen thousand people have contributed to this fund. The objective of the campaign is two million dollars. The building in the Philippines is progressing rapidly and will probably be completed within a year and the entire Leonard Wood program will then be in operation. The committee reports that the leprosarium on the island of Culion has cured seventeen hundred lepers.

COMPARISON OF DISEASE INCIDENCE IN CONNECTICUT WITH 1928 AND SEVEN YEAR AVERAGE MONTH ENDING JUNE 8

DISEASES	1929					1928			
	Wk. ending May 18	Wk. ending May 25	Wk. ending June 1	Wk. ending June 8	Average cases reported for week corresponding to June 8 for past seven years	Wk. ending May 19	Wk. ending May 26	Wk. ending June 2	Wk. ending June 9
Cerebrospinal Men.	1	2	1	1	1	2	2	3	-
Chickenpox	95	64	77	81	58	63	73	55	40
Conjunctivitis Inf.	-	-	1	-	22	-	1	-	-
Diphtheria	15	39	17	24	26	23	26	27	11
Dysentery Amoebic	-	-	-	1	-	-	-	-	-
Encephalitis Epid.	1	-	2	-	-	-	-	-	3
German Measles	110	117	118	86	25	31	29	31	34
Influenza	10	12	5	5	2	46	27	13	2
Malaria	-	2	-	-	-	-	-	-	-
Measles	253	335	219	197	261	279	354	351	340
Mumps	77	111	76	53	52	104	93	76	116
Pneumonia (Broncho)*	24	23	24	19	25	42	44	26	38
Pneumonia (Lobar)	42	40	20	19	24	61	68	19	33
Poliomyelitis	-	-	-	-	-	-	-	1	-
Scarlet Fever	61	58	41	57	68	132	78	42	39
Septic Sore Throat	1	3	-	2	1	2	-	-	1
Smallpox	9	4	-	-	1	4	2	1	3
Tetanus	-	-	-	-	-	-	-	-	1
Tuberculosis (Pul.)	44	40	26	31	31	47	24	58	31
Tuberculosis (O.F.)	2	3	-	4	3	3	3	1	5
Typhoid Fever	1	4	1	-	2	-	1	-	2
Undulant Fever**	-	1	1	-	-	-	-	-	-
Whooping Cough	33	44	24	58	58	96	115	108	102
Gonorrhoea	45	24	32	26	19	24	41	13	32
Syphilis	40	51	47	44	22	35	29	17	50

* Made reportable January 1, 1925.
** Made reportable July 1, 1928.

REMARKS: No cases of Asiatic cholera, glanders, plague, rabies in humans and yellow fever during the past seven years.

SERODIAGNOSIS

The results of the Second Laboratory Conference on the Serodiagnosis of Syphilis demonstrated the clear, although unofficial, superiority of the Kahn Test over all the other tests employed in the Conference. The originator of the test, Professor R. L. Kahn of the University of Michigan, was himself one of the participants in the Conference, which was held in Copenhagen from May 21 to June 4, 1928. The full report on the Conference has just been published by the League of Nations.

"In view of the many complicated factors involved and the danger of misrepresentation inherent in any summary," reads an official statement regarding the Conference, "no general statement can be made on the technical results of the Conference; but it may be said that the tests afforded an opportunity of estimating the sensitiveness and specificity of each method in relation to every other method tested."

It will be recalled that the first Serological Laboratory Conference took place at Copenhagen in 1923. Since that time, it is said, a considerable improvement has been noted in several of the methods employed for the serodiagnosis of syphilis. Also, a number of new tests have been elaborated, especially the flocculation tests, including the Kahn test, which depend on directly visible changes in mixtures of syphilitic serum and extract. After several requests from Institutes and individuals particularly interested in these problems, one looking forward to the establishment of a further comparative examination of methods of serodiagnosis of syphilis had been received by the League Health Organization, this Second Laboratory Conference was called, and was held at the Danish State Serum Institute at Copenhagen.

Thirty-seven medical men and women from nineteen Countries attended the Conference, either as experts invited by the Health Organization, or as delegates of Governments or Institutions. Dr. Kahn, representing the State Hygienic Laboratory, Lansing; and the University of Michigan, was the only American expert present. Dr. J. A. Kolmer, of the University of Pennsylvania Graduate School of Medicine, had been unable to accept the invitation to participate in the work of the Conference.

Among the resolutions adopted at the close of the gathering, the Conference particularly emphasized the following points:

(1) That, in spite of increased sensitiveness which the various serodiagnostic methods have shown at the present Conference, serological results may, notwithstanding the presence of a syphilitic infection, be negative in certain cases;

(2) That a positive reaction in the absence of a clear history or of signs of syphilis should, if only to exclude all possibility of error, never be accepted until a test of at least one more specimen has afforded the same result;

(3) That, except in the case of a few well-defined pathological conditions, syphilis is indicated with a degree of probability which closely approaches certainty, when several tests performed according to different methods give a positive result.

In addition, because of the constant improvement in serodiagnostical methods, it was considered "extremely desirable that the Health Organization of the League of Nations should keep this question on the programme and take steps to secure further comparisons of this kind in the future."

It was also recommended that the Danish State Serum Institute, acting as the central laboratory of the League Health Organization, should undertake the distribution of a series of serum samples for comparative tests in the different laboratories; at request, test any other serum samples which it may receive, or distribute them for purpose of comparative re-testing; and arrange in the same way an exchange of extracts, thus initiating a co-ordination of work which might be further developed in due course.

The full report of the Conference contains an introductory statement explaining in general its aims and methods of work; a full list of participants; resolutions adopted; complete tabular analyses of results; detailed description of each method employed; a list of institutions which furnished blood and spinal fluid samples; a description of comparative results obtained by the Kahn Test and the Bordet-Wassermann Reaction employed in examination of spinal fluids in London following the Conference. Also included are the observations of participants on the results obtained.

(This report (C. H. 726, 1929. III. 3) may be procured by applying to the World Peace Foundation, 40 Mt. Vernon Street, Boston, Mass.)

THE LINCOLN SCHOOL FOR NURSES

The exercises, dedicating the new building of the Lincoln School for Nurses in New York City to "its high purpose for the advancement and progress of scientific medicine among the colored race", took place on the 19th of June at 3 P. M.

The principal speakers of the occasion were the Honorable James J. Walker, Mayor of New York City, and Dr. Linsly R. Williams, Director of the New York Academy of Medicine. Mrs. Arthur Curtiss James, representative of the Board of Managers, outlined the new policy of training Negro women for executive position in the public health and nursing fields, which will follow the opening of the new structure, which is the first school building of its kind, being fully equipped with the latest scientific devices.

The structure is ten stories in height. On the roof is a large open air solarium to be used for recreation purposes. The infirmary for nurses is on the top sleeping floor. This has been equipped as a small hospital. There is a five-bed ward and two single-bed wards for isolated cases. There is also a dressing and treatment room, diet kitchen, and large sunny sitting room for convalescents. All sleeping quarters have been allocated according to classes, with a special wing for graduate nurses. A large living room entrance hall, solarium and concert hall, having a large stage at one end, are on the ground floor, as are the library, study and board room. All scientific laboratories and general facilities for teaching are in a separate wing. The cafeteria and kitchen are in the basement.

In considering the future of Lincoln as a center of higher education, two factors are outstanding: first, the growing demand for its graduates as the health problems of the Negro population become more complex and more urgent; second, the need, on the part of the graduates themselves, for positions of more responsibility, that they may utilize their train-

ing to the utmost and also develop their own latent capacities for leadership among their people.

MAINE MORTALITY STATISTICS: 1928

Washington, D. C., June 25, 1929.—The Department of Commerce announces that the 1928 death rate for Maine was 1,384.3 per 100,000 population as compared with 1,381.8 in 1927.

The principal increases in rates (per 100,000 population) from those of the preceding year were from: nephritis (103.3 to 110.3), diseases of the heart (260.5 to 264.8), cerebral hemorrhage and softening (140.4 to 142.6), and diabetes mellitus (21.3 to 24.8). The death rate from all accidental causes increased from 68.9 to 80.3, the individual type of accident showing the greatest increase being accidental drowning (8.6 to 14.3).

Significant decreases in rates from 1927 to 1928 were those from: cancer (137.2 to 134.5), tuberculosis, all forms (68.3 to 60.3), diarrhea and enteritis, under 2 years (18.7 to 15.0), scarlet fever (4.5 to 2.1), whooping cough (9.5 to 6.8), measles (10.1 to 4.8), and influenza (38.6 to 35.0).—*Department of Commerce, Washington.*

EXCERPT FROM THE WORLD'S CHILDREN

COMPILED BY THE U. S. CHILDREN'S BUREAU

SCHOOL CHILDREN AND HEART DISEASE

Ninety children out of 10,000 examined were found to have organic heart disease during a survey of heart conditions among public-school children recently conducted in Philadelphia, according to the supervisor of medical inspection of public schools of that city. The younger children showed slightly less disease than the older, and the boys slightly less than the girls. Heart disease is reported to be increasing among children from 10 to 14 years of age, and to be the principal cause of death during that age period.

HIGH SCHOOLS BECOMING MORE POPULAR

More public-school children are going on into the high school every year, and more are remaining to complete the four-year course. Basing its estimate on school statistics for 1926, the United States Bureau of Education reports that of every 1,000 children entering the public schools 720 reached the eighth grade, 605 entered the high school, and 247 were graduated. In 1918 only 342 reached high school, and only 139 were graduated.

PLENTY OF CHANCES TO STUDY ABOUT CHILDREN THIS SUMMER

Parents and teachers who want to study about children this summer will find courses available in at least 47 schools and colleges in all parts of the United States. Nursery schools will be conducted as laboratories for the students of child development in 17 of the institutions. A partial list of courses will be found in the May issue of Child Study, published in New York City.

ANIMAL DISEASES AND PUBLIC HEALTH

In an article by Dr. John R. Mohler of the Bureau of Animal Industry published in the *United States Daily* the following reference to meat inspection service is interesting.

Closely allied with such animal-conservation work is the extensive Federal meat-inspection service. In the popular mind, this consists in the veterinary examination of food animals, both before and after slaughter, and the condemnation of all unsound meat.

Yet the influence of the service is much broader than that. By post-mortem reports it acquaints the livestock producer with the animal diseases most prevalent in his locality and in different parts of the country; it conducts laboratory studies of meat-handling methods with special regard to prevention of spoilage; it supervises the sanitation of inspected establishments; it passes on the truthfulness of labels; it controls the interstate transportation of meat through the devious channels of commerce; it certifies the wholesomeness of meat and meat food products for export; and it performs many other useful duties.

Last year more than 75,000,000 food animals received Federal inspection, the cost of the service amounting to about 1/16th of a cent for each pound of dressed meat and lard. This low cost has been made possible by a skilled personnel trained for the work, by the large volume of operations, and by the use of especially designed equipment.

SMALLPOX INCREASES

For the first time in many weeks smallpox has shown an increase as reported from 46 states. The number recorded during the week ending May 25, 1929, is 1060. The prevalence is found to be more general in rural districts.

A CASE OF TULAREMIA IN NEW ENGLAND

The daily papers report the occurrence of a case of tularemia in Rhode Island according to the statement of Dr. B. U. Richards, Commissioner of Health of Rhode Island.

The afflicted man found three dead rabbits which he cut up to give to his dogs.

Warnings have been issued at various times with respect to the probability of the invasion of New England by tularemia because the disease has been found in many other states.

The disease is usually contracted by an infection of a cut or abrasion on the person of one who has handled a diseased rabbit.

If these three rabbits were infected, it is reasonable to expect that the disease will spread throughout this section of the country. Hunters and trappers should be warned of the danger of taking sick or dead rabbits.

NEW HEALTH CENTER ON EAST RIVER, NEW YORK CITY

Ground was broken recently by Edward W. Sheldon, Chairman of the Joint Administrative Board of the New York Hospital—Cornell Medical College Association for the first of fourteen buildings soon to be erected on the East River between Sixty-Eighth and Seventy-First Streets. This new medical center will be on the north side of the Rockefeller Institute for Medical Research. This new development has been made possible by gifts from Payne Whitney. This

site will be used for a lying-in-hospital, a pediatric hospital and a psychiatric hospital.

Mr. Sheldon used a silver spade presented by Robert Eidletz of the contracting firm which will carry on the construction under the architects, Coolidge Shepley Bulfinch and Abbott of Boston.

A further description of the plans and exercises were set forth in the columns of the *New York Times* as follows:

Nearly 1,000 patients and twelve or more major departments of the medical college will be housed in them, Mr. Sheldon said.

"In the centre of the plot," he declared "will rise the main hospital building, containing the medical and surgical wards, the operating rooms, and accommodations for private patients, surmounted by the living quarters of the resident hospital staff. This building will reach a height of twenty-four stories.

"About this central building will be grouped in lower buildings the laboratories or institutes of the Medical College along York Avenue, while along the river will be the special hospitals for psychiatry, pediatrics and maternity. On the north side of Seventieth Street will be built the residence and school for nurses, the power plant, homes for employes and various mechanical facilities."

After Mr. Sheldon had removed the first shovelful of earth, John H. Whitney, son of Payne Whitney, plied the spade. Following him came Dr. Walter L. Niles, former dean of Cornell Medical College, and Dr. Robinson.

Among the others who witnessed the ceremony were:

J. Du Pratt White of the Cornell Board; Mrs. Charles S. Payson, daughter of Payne Whitney; Walter Douglas, president of the Memorial Hospital; William Woodward, New York Hospital Board; Frank Polk, New York Hospital Board; Dr. William Darrach, dean of the College of Physicians and Surgeons, Columbia University; and Dr. Samuel Brown, dean of New York University Medical School.

EFFORTS AT ERADICATION OF BOVINE TUBERCULOSIS

The Federal Bureau of Animal Industry reports that more than 2,000,000 cattle were on the waiting list for tuberculin testing at the end of 1928.

The record of 1929 is expected to be large due to the co-öperation of stock raisers and dairy men. Up to January 1, 1929, 629 counties in the United States had been recognized as "modified acredited areas" which means that after tests the Bureau regarded them as practically free from tuberculosis. There were 2,164,105 cattle in accredited herds.

Thirty-three states are asking for the testing of cattle. This demand has taxed the Bureau beyond its capacity.

ASSOCIATION OF RECORD LIBRARIANS OF NORTH AMERICA

A Message from the President:

The Annual Session of this Association is but three months away, and we are anticipating an especially interesting occasion for two reasons: first, it is our Commencement, the beginning of our life as an established organization; and secondly, a series of programs has been arranged which well merits the attendance of our members at every meeting.

The record librarians of Chicago are enthusiastic and are doing their utmost to make the Session a notable one. Chairmen of Convention Committees have been appointed as follows: Committee on Arrangements, Mrs. Jessie W. Harned, President of the Chicago and Cook County Record Librarians' Association; Committee on Credentials, Miss Lois Baker, Presbyterian Hospital, Chicago; Program Committee, Miss Jessie C. Longmuir, Chicago; Committee on Exhibit, Mrs. Emily Bufe, Michael Reese Hospital, Chicago. Dr. Malcolm T. MacEachern, our honorary member, is exerting himself in behalf of the Association with all the vigor which we who attended the meeting of a year ago in Boston so well recall.

Mrs. Clara A. Doolittle, President of the Connecticut Hospital Historians Association, is Chairman of the Nominating Committee and is, together with four other members of this Association, preparing the ballot for the election of officers for the coming year. The Constitution and By-Laws are ready for adoption and acceptance, which business will occupy the first meeting.

The Session will be held October 14-18, 1929, at the Twelfth Annual Hospital Standardization Conference of the American College of Surgeons at Chicago. We hope that it will be possible for a large number to attend, not only our present members but many other people who may be interested to know for what purposes this Association was formed, and who may also be glad to avail themselves of this opportunity to join us. Chicago is a city situated in the heart of the country and is easily within reach of both our American and our Canadian friends.

GRACE W. MYERS, *President.*

WORLD CONFERENCE FOR CRIPPLED CHILDREN

Elyria, Ohio.—A world conference of workers for crippled children, to be attended by public officials, scientific men and social workers, will be held at Geneva, Switzerland, July 28 to August 2, it has just been announced by Edgar F. Allen, president, the International Society for Crippled Children, which has its offices in this city. Mr. Allen, who has devoted many years to the work for crippled children throughout North America, is realizing an objective in bringing together the results of scientific and social progress in this problem.

Every European country which has given thought to helping its crippled children, will be represented on the Conference program. Delegates from all parts of North and South America and far eastern countries are now making arrangements to attend. Indications are that the Conference will be thoroughly representative in every respect.

President Allen will open the Conference with an address detailing "The Evolution of the Problem of the Crippled Child". Mr. Allen will summarize the ground covered by those who have had to overcome prejudice, ignorance, indifference and lack of proper technical knowledge, to reach the present stage where governmental bodies are taking over responsibilities and employers are finding work that handicapped persons can do.

Mrs. Edith Reeves Solenberger, of Philadelphia, has just completed an international survey to list the agencies and instrumentalities available for this work in several leading countries. This will be presented at the Conference.

Every important phase of the crippled children's problem will be thoroughly discussed by experts from all countries represented. The general subjects to be discussed are: finding crippled children, examination and diagnoses, hospitalization, care and training during convalescence, relations of practitioners, institutional men and women and lay workers and their relation to an organized program, the education of the crippled child, vocational training and placement, and the prevention of the causes of crippling conditions.

Arrangements have been made whereby delegates may visit leading European institutions where crippled children are cared for. Among these are: England—Chailey, Heritage Craft Schools and Homes for Crippled Children; Germany—Munich, The Royal School and Home for Crippled Children; Berlin, the Oskar-Helene-Heim Institution and Day School for Crippled Children; Austria—Vienna, The Orthopedic Hospital; and Italy—Bologna, The Rizzoli Orthopedic Institute. Many of the leading orthopedic surgeons of Europe have been trained and are practicing their art at these institutions.

The Geneva Conference Committee has the following American members: Chairman, Paul H. King, Detroit, Michigan; Thomas H. Blair, Ottawa, Canada; Mrs. Elise Drexler, San Francisco, California; Dr. John E. Fish, Canton, Massachusetts; Hiram C. Martin, St. Louis, Missouri; Mrs. Elias Michael, St. Louis, Missouri; Mrs. Edith R. Solenberger, Philadelphia, Pennsylvania; Miss Edna L. Foley, Chicago, Illinois.

The officers of the International Society for Crippled Children are: Edgar F. Allen, President, Elyria, Ohio; Harry H. Howett, Executive Secretary, Elyria, Ohio; Vice Presidents, Paul H. King, Detroit, Michigan; Ed. R. Kelsey, Toledo, Ohio; Miss Jane A. Neil, Chicago, Illinois.—*The International Society for Crippled Children, Harry H. Howett, Secretary, Elyria, Ohio.*

THE NEW ENGLAND OBSTETRICAL AND GYNECOLOGICAL SOCIETY

A group of prominent practicing obstetricians and gynecologists representing all the New England States held a meeting on June 10, 1929 at the Boston Athletic Association in Boston, Massachusetts. After an informal conference it was decided to form the New England Obstetrical and Gynecological Society.

It has been felt for a long time that there should be a closer connection between the teachers of Obstetrics and Gynecology and the practitioner of medicine, and it is the aim of the society to further this end.

Among the members of the Founders Committee of this organization were represented all the medical schools of New England, all the teaching clinics and hospitals devoted to the practice of Obstetrics and Gynecology and many practitioners particularly interested in these subjects.

The Founders Committee was comprised of the following men:—Franklin S. Newell, M.D., Boston, Mass.; Nathaniel R. Mason, M.D., Boston, Mass.; James R. Miller, M.D., Hartford, Conn.; Frederick W. Johnson, M.D., Boston, Mass.; Joseph P. Cohen, M.D., Boston, Mass.; Alonzo K. Paine, M.D., Boston, Mass.; Samuel R. Meaker, M.D., Boston, Mass.; Roy J. Heffernan, M.D., Boston, Mass.; Adam P. Leighton, Jr., M.D., Portland, Maine; Joseph W. O'Connor, M.D., Worcester, Mass.; Edwin R. Fleming, M.D., Medford, Mass.; Bertram H. Buxton, M.D., Providence, R. I.; John Walsh, M.D., Providence, R. I.; Delbert L. Jackson, M.D., Boston, Mass.; Thomas Almy, M.D., Fall River, Mass.; William A. Ham, M.D., Dorchester, Mass.; John J. Elliott, M.D., Roslindale, Mass.; Arthur F. G. Edgelow, M.D., Springfield, Mass.; Edward F. Regan, M.D., Framingham, Mass.; Thomas R. Goethals, M.D., Boston, Mass.; Edmund H. Robbins, M.D., Somerville, Mass.; Robert O. Blood, M.D., Concord, N. H.; Charles E. Mongan, M.D., Somerville, Mass.; Fred J. Lynch, M.D., Boston, Mass.; Frederick L. Good, M.D., Boston, Mass.; Foster S. Kellogg, M.D., Boston, Mass.; Louis E. Phaneuf, M.D., Boston, Mass.; Patrick E. McSweeney, M.D., Burlington, Vt.; Robert M. Green, M.D., Boston, Mass.; Edward S. Brackett, M.D., Providence, R. L.; Roland B. Moore, M.D., Portland, Maine; Ralph L. Reynolds, M.D., Waterville, Maine; H. J. Stander, M.D., Baltimore, Md. (honorary); Delos J. Bristol, Jr., M.D., Boston, Mass.; Daniel J. Ellison, M.D., Lowell, Mass.; John Rock, M.D., Boston, Mass.; Charles J. Kickham, M.D., Boston, Mass.; Harold V. Hyde, M.D., Boston, Mass.; William P. Graves, M.D., Boston, Mass.; John T. Williams, M.D., Boston, Mass.; Herbert Thoms, M.D., New Haven, Conn.; Arthur H. Morse, M.D., New Haven, Conn.; Dennis E. Sullivan, M.D., Concord, N. H.; Henry T. Hutchins, M.D., Boston, Mass.; Frank A. Pemberton, M.D., Boston, Mass.

The following officers were elected:—Dr. Charles E. Mongan of Somerville, Mass., President; Dr. William P. Graves, Boston, Mass., Vice President; Dr. Edward S. Brackett of Providence, R. I., Secretary; Dr. James R. Miller, Hartford, Conn., Treasurer; Dr. Frederick Lynch, Boston, Mass., Recorder.

It is proposed that an annual meeting shall be held in Boston in November with one other meeting during the year to be held in some New England city agreed upon at the Boston meeting. At these meetings the new members of the Society will be enrolled.

GREAT CANCER FIGHT PLANNED

Science's newest attack upon the unsolved problem of cancer will be launched next month in a research clinic at the Cook County Hospital under the direction of eminent doctors, including Dr. Charles Mayo, famous surgeon of Rochester, Minn.

By observation, experimentation, and studying discoveries of other clinics, the scientists will seek the cancer cure and preventive which they believe exists.

Final plans for the clinic were drafted last week at Rochester, where Dr. Herman N. Bundesen, coroner of Cook county (Chicago), and Anton J. Cermak, president of the Cook county board, had gone to confer with Dr. Mayo. The plans were made public by Dr. Mayo when he passed through Chicago June 15 en route to New York, whence he will sail for a European vacation.—*Boston Traveler.*

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS, MAY, 1929

GENERAL PREVALENCE

The monthly reported incidence was not unusual.

The reported incidence of chickenpox was high.

The reported incidence of diphtheria, poliomyelitis, German measles, mumps, scarlet fever, whooping cough, typhoid fever, lobar pneumonia, non-pulmonary tuberculosis, gonorrhea and syphilis was within endemic limits.

The reported incidence of influenza and measles was low.

A new low record for the month was established for pulmonary tuberculosis.

RARE DISEASES

Anterior poliomyelitis was reported from Boston, 1; Lawrence, 1; Orange, 1; Oxford, 1; Rockland, 1; Sharon, 1; Southwick, 1; Westfield, 1; total, 8.

Anthrax was reported from Lynn, 1; total, 1.

Encephalitis lethargica was reported from Arlington, 1; Boston, 2; Lynn, 1; Methuen, 1; Pittsfield, 1; Salem, 1; total, 7.

Epidemic cerebrospinal meningitis was reported from Boston, 8; Chelsea, 1; Chicopee, 1; Lowell, 1; Lynn, 1; Leominster, 1; Westfield, 2; Worcester, 5; total, 20.

Malaria was reported from Chelsea, 3; Danvers, 1; total, 4.

Pellagra was reported from Boston, 1; Lawrence, 1; total, 2.

Septic sore throat was reported from Amesbury, 1; Amherst, 1; Beverly, 1; Boston, 11; Cambridge, 1; Chicopee, 1; Haverhill, 1; Lee, 1; Lynn, 1; Medford, 1; Needham, 1; Taunton, 1; Winthrop, 1; total, 23.

Smallpox was reported from Middleboro, 223; Bourne, 1; Brockton, 2; Hanover, 1; Hanson, 1; Lakeville, 1; Rochester, 1; Taunton, 4; Wareham, 1; Whitman, 3; total, 238.

Tetanus was reported from Quincy, 1; Randolph, 1; total, 2.

Trachoma was reported from Boston, 4; Chelsea, 1; Everett, 1; Hudson, 1; Wakefield, 1; total, 8.

Trichinosis was reported from Boston, 1; Lynn, 1; total, 2.

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES.

	Cases in Entire Population						
	May 1929	May 1928	Prosodemic Index	Epidemic Index	May 1929	May 1928	Expected Rate***
ALL CAUSES	8738	10145	-	-	199.5	234.6	-
Ant. Poliomyelitis	8	7	9*	.9**	.2	.2	.2
Diphtheria	316	315	233*	1.4**	7.2	7.3	5.3
Measles	2582	4252	6194*	.4**	58.9	98.3	141.4
Pneumonia, Lobar	392	706	381*	1.0**	8.9	16.3	8.7
Scarlet Fever	1005	1049	1184*	.8**	24.0	24.3	27.0
Tuberculosis, Pul.	427	475	562*	.8**	9.7	11.0	12.8
Typhoid Fever	35	14	26*	1.3**	.8	.3	.6
Whooping Cough	750	726	1067*	.7**	17.1	16.8	24.4
Chicken Pox	917	554	-	-	20.9	12.8	-
German Measles	197	81	-	-	4.5	1.9	-
Gonorrhea	390	483	-	-	8.9	11.2	-
Influenza	32	304	-	-	.7	7.0	-
Mumps	512	678	-	-	11.7	15.7	-
Syphilis	147	171	-	-	3.4	3.9	-
Tuberculosis, O.F.	81	82	-	-	1.8	1.9	-

* This Index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur, and is for the purpose of comparison with the number of cases which actually did occur.

** This ratio expresses how prevalent the disease is compared with the index mentioned above; 1.0 indicates that the actual number of cases equals the expected number. A larger number means a greater prevalence, and a smaller number a lesser prevalence than expected. Thus, 2.0 would indicate twice the expected number of cases, and .5 half the expected number of cases. The method used to determine the indices is described in the August 18, 1927 issue of the Boston Medical and Surgical Journal.

*** Calculated from the Prosodemic Index.

INSULIN AND DIABETES

The deathrate from diabetes in the first three months of 1929 (23.8 per 100,000) was the highest ever recorded among the Industrial policyholders of the Company. The large increase in the deathrate from this cause this year was due, in part, to the wide prevalence of influenza and pneumonia, which hastened the deaths of a number of diabetics. An increase in the deathrate from diabetes during such epidemics is expected, because infections of all types are dangerous to diabetics, and particularly generalized infections such as influenza. But, apart from such deaths, there has been a large increase in the diabetic mortality; and during the months of March and April, with the influenza epidemic rapidly waning, the diabetes deathrate exceeded the high figures recorded for these months in 1928.

The rise in the deathrate from this disease, so soon after the discovery of insulin, has been very disconcerting to physicians and public health workers, who know how valuable this treatment is. It is hoped that this announcement of the bare facts concerning the rising mortality from diabetes will not again evoke the misinterpretations which certain individuals, and a few newspapers, made of a statement published in the *Statistical Bulletin* of May, 1927. That statement, in effect, was that, despite the general and increasing use of insulin, the diabetes deathrate had increased. In some quarters, the inference was drawn, and published, that the Metropolitan considered the insulin treatment useless. Despite the fact that the diabetes deathrate did increase in 1927, showed a further rise in 1928, and bids fair to reach, in 1929, the highest figure ever recorded, it is our definite judgment that, but for the increasing use of insulin, the deathrate would be much higher. It has been demonstrated that insulin has been a great benefit in prolonging the life of young diabetics. Older patients, formerly kept on starvation diets, and living closely restricted lives, are able to resume their former activities. Coma is preventable and curable by insulin; and the treatment, under expert care, helps diabetics through infectious diseases and surgical operations. But the course of the diabetes deathrate among insured males leaves no room for doubt that between forty-five and sixty-five years there has been no important change, and that, after age sixty-five, there has been a distinct and significant rise. For females, the only ages showing a decline have been those of childhood and early adult life. From thirty-five to forty-five years, there has been a slight rising tendency; and the deathrate among female diabetics after fifty-five has risen sharply.

It is our best judgment that diabetes is on the increase, in spite of the use of insulin, because of the dietary excesses practiced by the American people. Insulin cannot control the diabetes incidence, because its use is not preventive. It is also true that more and more cases are being uncovered because of the more general use of routine urinalysis in life insurance medical examinations and by physicians; also through periodic health examinations.

The increasing use of insulin is borne out by information from physicians regarding its use in fatal cases on which the Metropolitan has paid claims during the early part of 1929. Up to April 15, data were available on 1,044 deaths. In 664 cases, or 63 per cent., insulin was administered. In a similar survey in 1924-5, only 881 out of 1,800 cases, or 49 per cent., were given insulin. Of the 664 cases, 46 per cent. were given the treatment only during the last month before death, compared with 55 per cent. in 1924-5. Those beginning insulin a month or more before death were 54 per cent. of all cases in 1929, compared with only 45 per cent. in the earlier period. Furthermore, in 1924-1925, only 7 per cent. of the cases had begun insulin treatment a year or more before death, as compared with nearly 30 per cent. in 1929. In 1929, 12 per cent. had been treated for three years or more before death.

Except at the younger ages, the percentage of these fatal cases treated with insulin was higher in 1929 than in 1925. Between the ages of 15 to 44, the percentage treated in the present series was 84, as compared with 71 in the earlier series; at ages 45 to 64, 66 per cent., against 52 in the earlier series; and at 65 years and over, 49 per cent. in 1929, as compared with 32 per cent. in 1924-1925. At ages under 15, there was no distinct difference between the two series, the percentage treated in each being approximately 70 per cent. The number of cases at these younger ages is, relatively, much smaller in the present than in the earlier study.

An encouraging result of the increasing use of insulin is the decline in the incidence of deaths from coma. Coma was present, in 1929, in 433 or 41 per cent. out of the 1,044 cases. In the earlier series, 48 per cent. died in coma. The improvement seems to be slight; but it must be remembered that the returns in the present series were gathered in a period of high deathrates from influenza and pneumonia, and many of the deaths in which there was sudden and fatal onset of coma, were caused by acute attacks of these diseases. Seventy-three per cent. of the coma cases received insulin during 1929, compared with less than 60 per cent. in the earlier series. One-fourth of those not receiving insulin during coma had had insulin during the course of the disease.

The reasons why insulin was not given to 111 patients who died in coma are of interest. In 21 of these cases, the failure was due to objection, either on the part of the patient or the family. All of these patients were 45 years of age or over. In 15 cases, the doctor reported that he had been "called in too late" for even insulin to be efficacious. In 17 others, there was an acute attack of influenza or pneumonia.

Strangely enough, another index of the improvement in the treatment of diabetics, with insulin, is the more frequent occurrence, along with diabetes, of heart, kidney, and circulatory diseases, as well as gangrene, all of which occur chiefly after age sixty; for this shows that more and more diabetics are living to advanced ages. The doctors reported evidence of these degenerative conditions in over 60 per cent. of the 985 cases in which diabetes was the primary cause of death. Out of the 569 such cases in which coma was absent, no less than 416, or 73 per cent., showed evidence of these degenerative diseases. Even of 416 cases who died in coma, 193, or 47 per cent., had cardiac, renal or arterial changes.

As we have already noted, the incidence of influenza and pneumonia among diabetics in the present series is very high because of the epidemic in the early part of the year. There were 99 cases of influenza and 132 of pneumonia.

These findings are wholly preliminary. The Metropolitan will continue collecting reports from physi-

cians throughout 1929. Early next year we will publish a statement of the facts of insulin treatment, covering the returns for the whole of 1929. The present study is part of a series about diabetes and insulin treatment which the Company is undertaking. Another investigation of great value is a follow-up of cases treated by one of the foremost specialists in this country in the treatment of diabetes. The interest of the Company in present aspects of diabetes mortality and treatment is due to the fact that this is one of the few diseases which, among older people, may be prevented by popular education, or, if incurred, can be successfully treated. Middle-aged diabetics can live out their normal expectation of life; and this is hardly true of any other degenerative condition developing in middle life. Moreover, diabetic coma is not only preventable, but, save in the late stages, is curable.—*Statistical Bulletin Metropolitan Life Insurance Co.*

CORRESPONDENCE

RADIODERMATITIS

June 18, 1929.

Editor, NEW ENGLAND JOURNAL OF MEDICINE, Boston, Mass.

Dear Doctor:

Your editorial comment, in last week's issue of the JOURNAL, was of interest. However I think it was unfortunate you added the last sentence, "It may be that suits for damage due to x-ray burns will be a matter of history".

"X-ray burns", which I believe is a poor term to use in a medical journal, will never be a matter of history, even when x-ray apparatus is so perfected as to make it fool-proof. When "burns" occur they are not due to any fault with the apparatus but to the operator usually.

"Radiodermatitis", the term physicians should use in speaking of x-ray burns, is most often due to ignorance on the part of the operator, sometimes to his carelessness, and very rarely to idiosyncrasy on the part of the patient, that is a decreased skin toleration to x-rays. This last can be guarded against by doing skin tolerance tests before treatment.

Now to go back to your article, especially the last sentence, it may do harm by giving untrained or poorly trained men a false sense of security. They may buy the newer type of apparatus feeling they cannot get burns with it. What they need more than safer apparatus is an increase in their knowledge of x-rays, when to use them, and the dangers of exposure.

Very respectfully yours,
JOSEPH L. MORSE.

ANTI-MENINGOCOCCUS SERUM SUPPLIED BY THE STATE DEPARTMENT OF PUBLIC HEALTH

The Commonwealth of Massachusetts
Department of Public Health
State House, Boston

June 14, 1929.

Editor NEW ENGLAND JOURNAL OF MEDICINE:

There has been considerable apprehension in regard to the possible spread of meningococcus meningitis from the western part of the country where it has been unduly prevalent this spring. In April and May we had 45 cases reported from nineteen communities. Twenty-two of these cases were from Boston and Worcester, and five from Westfield. Otherwise there was no localization. Our study of some of these cases showed that a large number had no lumbar puncture performed and no serum used. There have been a few deaths.

It would seem worth while to inform the profession of the State that with the appearance of meningitis in California we sent on some of our serum which is reported to compare favorably with the other anti-meningococcus sera on the market. From this and our experience in the past with this serum its extensive use in this disease would appear to be indicated. It may be obtained from the local board of health, from the State District Health Officer, or by calling us directly at the State House.

Yours truly,
GEORGE H. BIGELOW, M.D.,
Commissioner of Public Health.

RECENT DEATH

JESSAMAN—DR. LEON WEBSTER JESSAMAN, Chief of Staff of the Framingham Union Hospital died at that institution shortly before midnight, June 11, 1929, at the age of 50. He underwent a serious operation last April but appeared to have recovered and was active in his profession of eye, ear and throat specialist until a short time before his death.

He was a native of Dorchester, N. H., attended the public schools of that town and of Campton, N. H., and entered the Tufts College Medical School where he received his M.D. in 1909. He served as Ophthalmia house officer at the Boston City Hospital. Settling in Framingham, Dr. Jessaman was appointed Ophthalmologist and Otolaryngologist to the Women's Reformatory in Sherborn and a member of the staff of the Framingham Union Hospital. He held membership in the Massachusetts Medical Society, the American Medical Association, The American College of Surgeons, New England Ophthalmological Society, New England Otological and Laryngological Society and the American Academy of Ophthalmology.

At the outbreak of the World war he joined the Harvard Medical unit and went overseas in May, 1917. He was attached to General Hospital No. 22 of the British Expeditionary Forces in France and later, as a captain in the U. S. Medical Reserve, to the Cambridge hospital at Aldershot, England. Dr. Jessaman returned at the close of the war and resumed his practice.

He was a member of Framingham lodge. 45, I. O. O. F., Fidelity Rebekah lodge, James J. McGrath Post, American Legion, Middlesex lodge, A. F. & A. M., Orient Chapter, O. E. S., Concord Royal Arch chapter and affiliated Masonic organizations.

Surviving are his wife, Edith Cummings Jessaman formerly of Laconia, N. H., and an adopted daughter.

RESOLUTIONS OF THE STAFF OF THE FRAMINGHAM-UNION HOSPITAL ON THE DEATH OF DR. LEON W. JESSAMAN

Whereas: Dr Leon W. Jessaman has for the past 19 years been a physician in this city.

Whereas: Through large practice and many con-

tacts he has faithfully served the many communities in this whole district.

Whereas: He has long been closely connected with the administration of the hospitals of the town, having been Chief of Staff of the Framingham Hospital, and later Chief of Staff in the Framingham-Union Hospital, which position he held at the time of his death.

It is resolved: That with an abiding sense of loss, and with growing realization of our indebtedness to him, we hereby give grateful expression of our appreciation; for the truly capable and faithful manner in which he gave himself generously in his daily work; for the fine spirit of co-öperation which marked his work with his fellows in his profession; for his untiring efforts and sacrificial service in Hospital Administration which will only be fully appreciated and valued now that his capable hand and willing heart have passed.

That through the inspiration of his friendship and his example we address ourselves with devotion to the carrying on of the task in which until now, he has led us.

That our heartfelt sympathy and good wishes be expressed to his family with the assurance to them of our indebtedness to Dr. Jessaman and our gratitude to him.

Signed:

STAFF OF THE FRAMINGHAM-UNION HOSPITAL
ALBERT S. OWEN, M.D., *Secretary.*

NEWS ITEMS

APPOINTMENTS AND PROMOTIONS TO THE SCIENTIFIC STAFF OF THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH — The Board of Scientific Directors of The Rockefeller Institute for Medical Research announces the following appointments and promotions to the Scientific Staff:

New Appointments:

Associates—Dr. Albert P. Krueger, Dr. A. L. Patterson, Dr. Oskar Seifried.

Assistants—Dr. Alf S. Alving, Mr. Frank H. Babers, Dr. Bernard Benjamin, Dr. George P. Berry, Mr. Robert T. Dillon, Dr. Samuel E. Hill, Dr. William H. Kelley, Dr. Franklin R. Miller, Miss Clara Nigg, Mr. Merritt P. Sarles, Dr. Maxwell P. Schubert, Dr. Mark P. Schultz, Mr. Albert B. Scott, Dr. J. Murray Steele, Jr., Mr. Philip G. Stevens, Dr. Bettina Warburg, Dr Bruce K. Wiseman.

Promotions:

Assistant to Associate—Dr. Lawrence R. Blinks, Dr. Louis A. Julianelle, Dr. Philip Levine, Dr. John B. Nelson, Dr. Theodore Shedlovsky, Dr. Harold J. Stewart.

JAMES G. McALPINE RESIGNS—James G. McAlpine, who has been considered as a prominent bacteriologist, has resigned from the staff of the Connecticut Agricultural College. He has devoted much attention to the study of contagious abortion and his findings are regarded as having saved millions of dollars by dairy farmers throughout the country.

APPOINTMENT OF DR. JOHN FARQUHAR FULTON—Dr. Fulton has been given the appointment to the chair of physiology at Yale University. He will also be associated with Yale's Institute of Human Relations.

Dr. Fulton has been recognized as having done remarkable work in the department of neuro-physiology. He received his bachelor of science degree at Harvard in 1921 and later studied at Oxford with Sir Charles Sherrington. He was given an M.A. and a Ph.D. from Oxford. Dr. Fulton is the author of the article entitled "Robert W. Smith's Description of Generalized Neurofibromatosis (1849)" which appears in this issue.

SENATE APPROVES BILL AFFECTING PARIS HOSPITAL—The Senate on June 10 agreed to a resolution (H. J. Res. 73) extending the limit of the property which may be owned by the American Hospital of Paris, which was incorporated in 1913, to $8,000,000. The measure now goes to the President. —*U. S. Daily.*

ASSIGNMENT OF SURGEON WALTER L. TREADWAY—The United States Public Health Service reports the assignment of Surgeon Walter L. Treadway to proceed to Boston, Mass., to make preliminary studies in carrying out provisions of Public Act 672, approved January 19, 1929.

BOSTON UNIVERSITY SCHOOL OF MEDICINE COMMENCEMENT ITEMS—The commencement activities for the year 1929 at Boston University School of Medicine began on Friday, June 14, with the Class Exercises and the Faculty Reception to the students. The exercises were in charge of the Class President, G. Herbert Hooper, with the Class History presented by Howard S. Reid and the Class Prophecy by William G. Moran. The class presented to the School an excellent motion picture projector, the gift being transmitted by Isadore W. Freeman. The address was given by Dr. Samuel R. Meaker for the Faculty on the subject: "Specializing in the Practice of Medicine". Following the address President Marsh and Dean Begg presented the hoods to the members of the class and the program closed with the valedictory by Enid K. Rutledge.

On Saturday, June 15, the Alumni of the School of Medicine entertained the graduating class at dinner at the University Club.

At Commencement on June 18 forty-nine received the degree of Doctor of Medicine and of this number the following received the degree cum laude: Charlotte Landis Maddock, Ph.D., Enid Kathleen Rutledge, A.B., Adrian Solo, S.B.

DR. WALTER B. CANNON HAS RECEIVED THE DEGREE OF LL.D. FROM BOSTON UNIVERSITY—At the commencement exercises of Boston University the conferring of the degree of LL.D. on Dr. Walter B. Cannon was announced.

ELECTIONS TO DELTA OMEGA, THE HONORARY PUBLIC HEALTH SOCIETY — President Herbert Hoover, Surgeon General H. S. Cumming of the United States Public Health Service, and Dr. Frederick F. Russell of the Rockefeller Foundation have been elected honorary members of Delta Omega, the honorary public health society. The gold key and the certificate of the society were presented to Mr. Hoover at the White House on June 18, 1929 by Lt. Col. Edward G. Huber and Dr. James A. Tobey, national president and secretary, respectively. Surgeon General Cumming also participated in this cere-

mony. The only other honorary member of Delta Omega is Dr. Charles V. Chapin of Providence, R. I., former president of the American Public Health Association.

A SAFETY DRIVE IN EAST BOSTON—Stimulated by the excessive number of children killed and injured in East Boston the East Boston Betterment Association launched a safety drive on June 17, continuing through the week.

Alexander Sullivan, President of the Organization has conducted a survey of the district and found conditions which have been referred to as appalling. Testing of automobile brakes, public meetings, and a parade will be important features of the drive.

GRADUATING EXERCISES FOR PHYSICAL THERAPY AIDES—On June 20, 1929, graduation exercises were held for Physical Therapy Aides trained in the Department of Physical Therapeutics at the Reconstruction Clinic. The class numbered sixteen and was the second to be graduated from this institution.

Graduates from this Department must either be graduates of a recognized training school for nurses or of a recognized school for physical education.

NOTICE

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examination of candidates for commission as Assistant Surgeon in the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified:

At Washington, D. C.	September 9, 1929
At Chicago, Ill.	September 9, 1929
At New Orleans, La.	September 9, 1929
At San Francisco, Cal.	September 9, 1929

Candidates must be twenty-three years and not over thirty-two years of age. They must have been graduated in medicine at a reputable medical college, and have had one year's hospital experience or two years' professional practice. They must satisfactorily pass oral, written, and clinical tests before a board of medical officers, and undergo a thorough physical examination.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Request for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

H. S. CUMMING, *Surgeon General.*

REPORT AND NOTICE OF MEETINGS

THE ANNUAL MEETING OF THE ESSEX NORTH DISTRICT MEDICAL SOCIETY

The annual meeting of Essex North District Medical Society was held at the Lawrence General Hospital, May 1, 1929.

From 11 to 12:30 the following clinics were held: Orthopedic and Laryngological and a demonstration in the Roentgen Ray department by members of the Staff.

A loan collection of interesting old medical books was shown by Harry H. Nevers, M.D., of Lawrence. The Hospital and its laboratories were open for inspection.

Dinner was served to 62 at 12:30 in the nurses' dining room. The business meeting was called to order by the President, Gustave E. Kurth, M.D., of Lawrence. The Secretary, J. Forrest Burnham, M.D., of Lawrence reported a total membership of 193, the largest in the history of the Society, and a total sum of $2028.73 in the treasury.

The President reported the daeth of C. S. Dunn, M.D., of Haverhill; and Joseph A. Hogan, M.D., of Lawrence read a memorial upon the death of Joseph A. Dorgan, M.D., of Lawrence.

Fred S. Smith, M.D., of North Andover, a member of the combined committee of the State Society, appointed to correct the injustices of the Workmen's Compensation and Automobile Accident Acts as they affect physicians, reported progress.

The following officers were elected:

President: Roland L. Toppan, M.D., Newburyport.
Vice President: John E. Bryant, M.D., Haverhill.
Secretary-Treasurer: J. Forrest Burnham, M.D., Lawrence.
Auditor: Joseph A. Hogan, M.D., Lawrence.
Censors: Fred S. Smith, M.D., Supervisor, North Andover; E. Philip Laskey, M.D., Haverhill; Charles J. Burgess, M.D., Lawrence; Charles F. Warren M.D., Amesbury; John W. Shaw, M.D., Newburyport.
Councilors: T. Raymond Healy, M.D., Newburyport; Frank W. Snow, M.D., Newburyport; W. Dacre Walker, M.D., Andover; Elmer S. Bagnall, M.D., Groveland; Fred S. Smith, M.D., North Andover; Henry F. Dearborn, M.D., Lawrence; Arthur P. George, M.D., Haverhill; Leroy T. Stokes, M.D., Haverhill; Lucien R. Chaput, M.D., Haverhill; Thomas W. Murphy, M.D., Lawrence.
Nominating Councilor: T. Raymond Healy, M.D., Newburyport.
Alternate Nominating Councilor: Fred S. Smith, M.D., North Andover.
Commissioner on Trials: Israel J. Clarke, M.D., Haverhill.
Committee on Funds: Granville S. Allen, M.D., Lawrence; George B. Sargent, M.D., Lawrence; Frank B. Pierce, M.D., Haverhill.
Reporter for the NEW ENGLAND JOURNAL OF MEDICINE: The Secretary.

The paper of the day upon Acute Empyema by Edwin A. Locke, M.D., of Boston was presented by George P. Reynolds, M.D., of Boston, because of the unavoidable absence of the author. Following the paper, Medical and Surgical clinics were held by Staff members.

NORFOLK DISTRICT MEDICAL SOCIETY

Below is the list of proposed meetings of the Norfolk District Medical Society for the year 1929-30. Invitations have been sent to the speakers and the list is true only on condition of their acceptance.

October 29, Medfield State Hospital, Harding, Massachusetts—Papers by the Staff.

November 26, Roxbury Masonic Temple—Dr. Roger

Graves—"Urology from the Standpoint of the General Practitioner." Surgical Discussion. Medical Discussion.

January 28, 1930, Roxbury Masonic Temple—"Recent Advances in Diagnosis and Treatment of Syphilis"—Speaker to be announced.

March 25, 1930, Roxbury Masonic Temple — Dr. Burton E. Hamilton—Subject to be announced.

May 6, 1930—Annual Meeting. Program to be announced.

The Censors meet for the examination of candidates, November 7, 1929 and May 1, 1930 in the Roxbury Masonic Temple, 171 Warren Street, Roxbury, at 4:00 P. M.

Applications must be in the hands of the Secretary at least one week previous to date of examination.

FRANK S. CRUICKSHANK,
Secretary, Norfolk District Medical Society.

SOCIETY MEETINGS

July 8-9—American Association for the Study of Allergy. Complete notice appears on page 906, issue of April 25.

July 9—American Heart Association. Scientific Meeting from 2 to 6 P. M. in the Auditorium of the Woman's Club, 448 Taylor Street, between 12th and 13th Streets, Portland, Oregon.

September 27-28—New England Surgical Society. Detailed notice appears on page 1227.

October 7-19—New York Academy of Medicine. Detailed notice appears on page 468, issue of February 28.

DISTRICT MEDICAL SOCIETY

Norfolk District Medical Society

October 29, 1929, to May 6, 1930—Complete schedule of meetings appears on page 1359.

BOOK REVIEWS

Progressive Relaxation: A Physiological and Clinical Investigation of Muscular States and Their Significance in Psychology and Medical Practice, by EDMUND JACOBSON, A.M., Ph.D., M.D. The University of Chicago Press, Chicago, Ill., 1929. xiii+429 pp. Price, $5.00.

It is not remarkable that the investigations on the physiology of muscle tone and reflex action carried on in the laboratory by Sherrington, Fulton and others, in the last fifteen years, should serve as a basis for the treatment of patients. Dr. Jacobson, who has been one of the contributors to the experimental work, has attempted to apply our knowledge of reflex control of muscle tonus and inhibition to patients with certain types of rather obscure lesions. His book gives an excellent summary of the physiological investigative work. He attempts to find, in the experiments made in his own laboratory and in those of other physiologists, a method that will lead to the relaxation of muscles and the ultimate relief of nervous tension. He gives the technical procedure for what he terms "progressive relaxation of muscles", and finds that the majority of people have difficulty in relaxation, an observation that is borne out over and over again in everyone's practice. He teaches patients, by a long series of treatments, to "relax" and he has found that a number of more or less obscure conditions have been relieved by this type of therapy. He has had most success in diseases such as chronic insomnia, mucous colitis, asthma, and certain types of psychoneuroses. The treatment, when carried out to an extent sufficient for therapeutic results, covers a considerable period of time and requires close co-öperation between physician and patient. Because of the time limit, this type of therapy must necessarily be restricted. Whether Dr. Jacobson is justified in his conclusions or not, time can only tell. The work is physiologically sound, but its value as a contribution to clinical medicine is still undetermined.

The International Medical Annual. 1929. William Wood & Co., New York. Price $6.00.

This volume described as a year book of treatment and practitioner's index is compiled under the editorship of Carey F. Coombs and A. Rendle Short and consists in contributions from thirty-one of the leading physicians and surgeons of the British empire. It is arranged in encyclopedic style and is carefully indexed. Its general form is suggestive of French's "Differential Diagnosis", an arrangement greatly facilitating its use as a reference book. Illustrations are used very generously and many of them are colored.

Each contributor, an authority in his respective field, carefully and fully reports the important articles that have appeared in the past year throughout the world. These are well co-ördinated to give a composite picture rather than a disjointed series of abstracts. Most emphasis is placed on therapy although all phases of medicine and the specialties are touched. Operations are carefully described and illustrated.

The volume as a whole impresses one as being one of the most practical and useful of all the annual reviews.

The Surgical Clinics of North America. Vol. 9, No. 2, April, 1929. W. B. Saunders Co., Phila.

This Chicago number of the clinics opens with a valuable article on the *acute abdomen* by Arthur Dean Bevan. A large number of cases are outlined briefly with the emphasis laid on the salient features of diagnosis and the clinical judgment required for proper management.

Kellogg Speed presents an able discussion of *ununiting fracture of the neck of the femur.* By way of prevention of this condition, he advocates routine immobilization for sixteen to twenty weeks in plaster followed by a walking caliper until the roentgenogram demonstrates that the trabeculae of bone have reformed in their axis of normal weight bearing. The usual case of ununited fracture does well with freshening of the surfaces and prolonged immobilization.

Carl Hedblom offers some cases illustrative of the modern *surgical treatment of pulmonary tuberculosis.* He has secured excellent results with multiple stage extrapleural thorocoplasty.

The difficulties in differential diagnosis are clarified in an article on *pseudo-appendicitis in children* by Albert Montgomery. He reports cases simulating appendicitis which proved to be pneumonia, purpura, pyelitis, osteomyelitis of the acetabulum, and retroperitoneal lymphadenitis.

Percival Bailey presents a case of a *wound of the superior longitudinal sinus* due to a fractured skull. A bone fragment should not be directly removed, but an osteoplastic flap should be raised to give

adequate exposure. Small tears can be controlled with a piece of muscle, larger ones by pressure.

While discussing *acute intestinal obstruction associated with ruptured appendix* E. M. Miller makes a useful suggestion to prevent excoration of the skin about an ileostomy. He kept his patients face down on a Bradford frame with a receptacle under the opening instead of using a dressing.

This volume contains several other valuable contributions chiefly from the Presbyterian and the Albert Merritt Billings Hospitals.

Handbook of Diseases of the Rectum. By LOUIS J. HIRSCHMANN, M.D., F.A.C.S. 389 pages; 252 illustrations and 5 colored plates. The C. V. Mosby Company, St. Louis. 4th edition.

This, the fourth edition of an already popular handbook on the diseases of the rectum is an excellent treatise on this very important subject. The entire subject is handled in such a way to be of value to any physician confronted with a patient with rectal symptoms. It is particularly valuable to the man who is not doing a highly specialized type of practice. The illustrations are good and the book is well indexed. It can be highly recommended to any physician who takes the responsibility of a rectal examination.

Injection Treatment of Internal Hemorrhoids. By MARION C. PRUITT, M.D., L.R.C.P., S. (Ed.) F.R.C.S., (Ed.) F.A.C.S. Price $3.00.

This is a clean cut, well rounded treatise, introduced by a brief but adequate discussion of the anatomy of the region concerned. The author deals with the etiology, classification, symptomatology and methods of diagnosis of hemorrhoids and brings out clearly the types of hemorrhoids suited to injection treatment. He also summarizes the history of this method since it was first used in 1871 by one Mitchell of Clinton, Illinois. Dr. Pruitt then gives, in detail, his own technique with a discussion of the complications which may develop in a small number of instances. A statistical comparison of a group of cases treated surgically and another similar group treated by injection demonstrated that the latter was equally efficient and had no mortality. It must be remembered, however, that injection treatment is applicable only to internal hemorrhoids.

BOOKS RECEIVED FOR REVIEW

Les Courants continus et Les Courants Faradiques by L. Delherm and A. Laquerrière. Published by Gauthier-Villars et Cie, Editeurs. 68 Pages. Price 10 fr.

Diseases of the Thyroid Gland by Arthur E. Hertzler. Published by C. V. Mosby Company. 286 Pages. Price $7.50. Second Edition.

Diseases and Deformities of the Spine and Thorax by Arthur Steindler. Published by C. V. Mosby Company. 573 Pages. Price $12.50.

The Tonsils and Adenoids and Their Diseases by Irwin Moore. Published by C. V. Mosby Company. 395 Pages. Price $6.50.

The International Medical Annual. 1929. Published by William Wood & Company. 568 Pages. Price $6.00.

A Manual of Diseases of the Nose, Throat, and Ear by E. B. Gleason. Sixth Edition. Published by W. B. Saunders Company. 617 Pages. Price $4.50.

Progressive Relaxation by Edmund Jacobson. Published by The University of Chicago Press. 428 Pages. Price $5.00.

Surgical Pathology by William Boyd. Second Edition, Revised and Reset. Published by W. B. Saunders Company. 933 Pages. Price $11.00

A History of the Medical Department of the United States Army by Colonel P. M. Ashburn. Published by Houghton Mifflin Company. 448 Pages. Price $5.

The Medical Department of the United States Army in the World War. Volume 111, Finance and Supply. By Col. Edwin P. Wolfe. Prepared under the Direction of Maj. Gen. M. W. Ireland. Published by United States Government Printing Office. 935 Pages.

The Nurse in Public Health by Mary Beard. Published by Harper & Brothers, Publishers. 217 Pages. Price $3.50.

The Origin of Malignant Tumors by Theodor Boveri. Translated by Marcella Boveri. Published by Williams & Wilkins Company. 119 Pages. Price $2.50.

History of Blockley. Compiled by John Welsh Croskey. Published by F. A. Davis Company. 765 Pages. Price $10.00.

Les Accidents de la Cholécystectomie by M. Serge Huard. Published by Masson et Cie, Editeurs. 116 Pages. Price 16 fr.

Handbuch Der Anatomie Des Kindes by Karl Peter, George Wetzel and Friedrich Heiderich. Published by J. F. Bergmann. Band 11/2. 303 Pages.

Physiopathologie et Traitement Du Diabète Sucré by H. Chabanier, M. Lebert and C. Lobo-Onell. Published by Masson et Cie, Editeurs. 433 Pages. Price 50 fr.

Le Métabolisme Basal by Marcel Labbé and H. Stévenin. Published by Masson et Cie, Editeurs. 335 Pages. Price 40 fr.

The Neuroses by Israel S. Wechsler. Published by W. B. Saunders Company. 330 Pages. Price $4.00.

Principles and Practice of Minor Surgery by Edward M. Foote and Edward M. Livingston. Sixth Edition. Published by D. Appleton and Company. 787 Pages.

Gonorrhea and Kindred Affections. Gonorrhea in the Male, Chancroid and Verruca Acuminata by George R. Livermore and Gonorrhea in the Female, and the Infectious Granulomata by Edward A. Schumann. Published by D. Appleton and Company. 257 Pages.

Methods and Problems of Medical Education. Twelfth Series. Published by The Rockefeller Foundation. 466 Pages.

The Life of Hermann M. Biggs by C.-E. A. Winslow. Published by Lea & Febiger. 432 Pages. Price $5.00.

International Clinics. Volume 11. Thirty-Ninth Series. Published by J. B. Lippincott Co. 305 Pages.

Lumière et Rayons infrarouges by E. and H. Biancani. Published by Gauthier-Villars et Cie, Editeurs. 177 Pages. Price 20 fr.

The Nose-Throat-and-Ear and Their Diseases. Edited by Chevalier Jackson and George M. Coates. Assisted by Chevalier L. Jackson. Published by W. B. Saunders Co. 1177 Pages. Price $13.00.

NOTICE

WITH RESPECT TO BARBER SHOPS

Invitations have been published in the newspapers to those interested to attend a public hearing in room 470, State House, Tuesday, July 2, at 11 A. M., to present any facts relating to the condition of barber shops which may be of interest to the State Department of Public Health.

A STUDY OF 718 LEPERS IN THE UNITED STATES

The United States Public Health Service has recently issued an interesting summary of a statistical study of lepers who have been hospitalized over a period of 34 years in the Louisiana Leper Home, which was later purchased by the United States and developed into the present National Leprosarium under the control of the Service. Of the 718 lepers who have been treated in this institution, 215 were foreign born, and 503 were natives of the United States. Mexico, China, Italy, Greece, and the Philippine Islands have furnished one-half of the total foreign born. The present population of the hospital is 304. Most of the lepers came from Louisiana, California, New York, Texas and Florida. Four hundred and eighteen came from Louisiana. The incidence of leprosy among the white population of Louisiana is computed to be twice that in the negro.

Of the total cases 11 per cent. were of the nerve type, 39.1 of the skin type and 49.9 of the mixed type; 72.3 per cent. were males and 27.7 were females. The social status of the patients represents a cross section of the normal populace.

The average age at onset of the disease is computed as 30.2 years. The average age of admission to the hospital was 36 years, giving an average period of six years prior to admission, during which time each patient may have been a menace to the public health.

In a group of 100 Louisiana lepers hospitalized more than 15 years ago, it has been disclosed from subsequent records that in 64 instances only one leper in the family developed the disease, while in the 36 other instances leprosy occurred in 83 additional relatives. There were 14 instances in which the disease occurred in a mother and one or more of her children; 15 instances in which the disease was found in sons of lepers; 21 instances in which the disease was found in daughters of lepers; 38 instances in which the disease was found among brothers and 31 instances in which the disease was found among sisters. In addition the following number of cases occurred in less closely related members of the family: 8 uncles, 8 aunts, 18 nephews, 9 nieces, 5 grandfathers, 3 grandmothers, 6 grandsons and 5 granddaughters. In some families the disease has invaded certain branches to the point of extermination. Instances of the occurrence of leprosy in families have also been noted in cases from other States than Louisiana. It has not invariably happened that the parent became infected before the child; indeed, the reverse frequently occurred. Intimate contact for many years was common where there was more than one case of leprosy in a family. In many instances several contacts with leprosy also existed. In five cases the incubation period is calculated as not less than six years.

The first manifestation of leprosy was recalled by most patients as one or more spots appearing on the face; in no instance were conditions described that might be identified as the initial lesion of leprosy.

Aside from the increased frequency of cases developing in males at about 21, and in females at about 19, and the counterbalancing rarity of leprosy before the age of 9, the disease appears to manifest itself at all ages about equally.

The duration of leprosy is computed as approximately 14 years. It appears that leprosy greatly shortens the life expectancy of the young, but has less effect on the life expectancy of the aged.

The mortality rate has gradually decreased in the National Leprosarium since its organization.

Leprosy itself has been the cause of death in less than 20 per cent. of the lepers; lung, kidney and heart disorders indirectly dependent on leprosy have caused more than one-half of the deaths.

Relapse, formerly common among discharged cases, is now rare because of the bacteriological tests made of the blood, skin and other tissues. Of 43 patients discharged from the National Leprosarium by the United States Public Health Service, treatment completed, only one has relapsed.—*United States Public Health Service.*

HOSPITALS AND HOSPITAL BEDS

Hospitals and hospital beds in this country have increased in number at a faster pace than the population, there having been in 1909 a total of 4,359 hospitals and 421,065 beds, while at the end of 1927 there were 6,807 hospitals and 853,318 beds. These recent economic changes in the United States relating to hospitals are revealed in information obtained in a national inquiry of more than a year by the National Bureau of Economic Research, and which has been published with the report of the Committee on Recent Economic Changes.

The Committee, with President Hoover as chairman, is made up of business and labor leaders and economists. The data obtained by the National Bureau of Economic Research were used by the Committee in formulating the report which is a critical appraisal of the factors of stability and instability in our economic life.

The data relating to hospitals was gathered by the National Bureau's section on "Changes in Consumption and the Standard of Living", under the direction of Dr. Leo Wolman.

Measuring the growth by the number of beds added annually the survey points out, the rate has been uniform, or a net gain of 25,000 beds a year. These figures include those for hospitals that are restricted to government or other limited classes of beneficiaries, such as Veterans' Bureau, the Army, Navy and Marine hospitals, or the state nervous and mental institutions as well as to those hospitals that are open to the whole community.

The growth of community hospitals is cited in the survey as an index of the available hospital capacity of the country. This class of institution increased from 4,013 in 1920 to 5,639 in 1928, and their bed capacity in the same period from 311,159 to 442,913. This growth, it is pointed out, has been wide-spread

and indicates the creation of hospital facilities where none existed previously. Thus the percentage of the 3,076 counties in the United States that have hospital facilities increased from 44 in 1920 to 57.4 in 1927. Much of this development has occurred in what were probably the backward areas of the country, the survey indicates.

In 1920, 25.4 per cent. of the counties of Alabama had hospitals and by 1928 this percentage had risen to 53.7; in Arkansas the rise was from 24 to 42.6 per cent.; in Georgia from 18.4 to 30.4 per cent.; in Mississippi from 26.8 to 45.2 per cent., and in Oklahoma from 35 to 51.9 per cent.

The survey furnished tables showing the ratio of the number of beds to the population for 1920, 1925 and 1927. For the whole United States in 1920 there was one bed for community use for 340 persons; in 1925 the rate was one bed for 291, with 270 persons to one bed in 1927. The figures for six geographical divisions of the country were North Atlantic states, 242 persons to one bed in 1920, 216 in 1925 and 198 in 1927; South Atlantic states, 508 in 1920, 407 in 1925 and 430 in 1927; North Central states, 355 in 1920, 301 in 1925 and 267 in 1927; South Central states, 705 in 1920, 544 in 1925 and 508 in 1927; Western states, 211 in 1920, 218 in 1925 and 209 in 1927.

Wisconsin had the highest number of beds to population, closely followed by Nevada, Colorado, and California, and by New York, Massachusetts and New Jersey. The states showing the lowest number of beds to population were South Carolina, Oklahoma, Georgia, Arkansas, Mississippi, Alabama and Kentucky.

Additional data disclosed that growth in number and capacity of our hospitals has been accompanied by a marked increase in their efficiency. Such growth in efficiency has been measured not only by improvement in medical education and rise in the standards of the medical profession but by such objective factors as the amount of hospital equipment. From 1922 to 1927 there was a 43 per cent. increase of hospitals reporting clinical laboratories and a 54 per cent. increase of institutions reporting x-ray departments. In 1922 hospitals to the number of 3,035, or 44 per cent., reported clinical laboratories and 2,841 or 42 per cent. reported x-ray departments; five years later 4,357, or 64 per cent., reported clinical laboratories and 4,387, or 64 per cent., reported x-ray departments.

There were at the same time 2,091 physical therapy departments reported in hospitals in 1927, the total beds in those institutions numbering 354,019. Equal progress through the introduction of occupational therapy, social service, dietary and other departments, was cited.

The survey emphasizes that the acquiring of these facilities involves more than the buying and setting up of so much machinery, but means the planning and construction of new buildings, the remodelling and enlargement of existing plants, and the addition of thousands of scientifically trained persons to operate these departments.

Other than President Hoover, the members of the Committee on Recent Economic Changes are Walter F. Brown, Renick W. Dunlap, William Green, Julius Klein, John S. Lawrence, Max Mason, Adolph C. Miller, Lewis E. Pierson, John J. Raskob, A. W. Shaw, Louis J. Taber, Daniel Willard, George McFadden, Clarence M. Woolley, Owen D. Young, and Edward Eyre Hunt, Secretary.—*Bulletin of the Committee on Recent Economic Changes, Department of Commerce Building.*

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